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JUNE, 1935

PUBLISHED BY
THE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

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JERSEY CITY, N. J.

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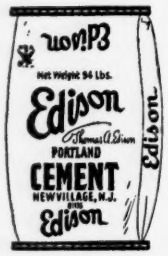

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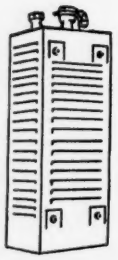

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PUBLIC WORKS AND N. R. A.

DECISION OF SUPREME COURT POINTS WAY

WORK PROGRAM SHOULD PRECEDE CODING ACTIVITY

TO EXPEDITE AIMS OF NEW DEAL

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THE momentous decision of the United States Supreme Court, whereby certain phases of the National Recovery Act were declared unconstitutional, has thrown about the shoulders of the President and his advisers a cloak of reflection; and has cast the nation into a state of anticipation.

In the uncertainty and confusion attending the decision, sight has apparently been lost of the fact that the N. R. A. comprises two major phases and that the matters of codes and price fixing are but part of the program comprehended by the Act. There remains the very vital problem of providing work for American citizens.

Without attempting to detract from the social side of the program of N. R. A. it has appeared to some that the enthusiasm, money and effort expended on coding might have been spent to greater advantage in expanding the work phase as the major premise of the argument toward the goal.

The coding of industry, while millions without its sphere are being afforded the bare necessities of existence by governmental appropriations, has at times appeared in the light of placing the cart before the horse. Is not the first and most essential duty of government to provide the opportunity for employment? Coding is necessary for future industrial activity, but work is and has been the absolute need of the moment.

The work phase of the N. R. A. was for a long time, all too long, subordinated to the activity of coding industry. As a result no appreciable progress has been made in the direction of restoring widespread employment. The number of persons on governmental payrolls increases monthly with perhaps a slight occasional halt.

For more than two years the work relief program has been carried on in a haphazard uncoordinated fashion, which has resulted in: the expenditure of hundreds of millions on useless endeavor; the augmentation, rather than diminution of funds required to meet relief payrolls, and the development of temporary governmental agencies, set up for relief, into more or less permanent organizations the majority of whose personnel have as their principal objective the indefinite continuance of such agencies and such relief; a very human and natural attitude born of the instinct for self-preservation.

To engineers, architects and contractors it has been obvious from the beginning that the method of attack is so unorthodox and illogical as to practically preclude accomplishment of the objective of restoring private employment. The efforts of the Federal authorities to prevent dishonesty in administering relief are easily appreciated, but the unwillingness to allocate to states definite sums to be expended through regular agencies, surrounded by any and all safeguards deemed necessary, makes it impossible to properly coordinate the planning and execution of wealth-creating work. Certain great national projects would naturally be effected by Federal agencies, but the great bulk of highway, sanitary, building and other wealth-producing activities are functions of states, counties and municipalities and could be best carried on by such agencies, subject to such safeguards as the Federal Government might impose.

A carefully planned program developed and prepared in advance of commencing construction would afford each community, county and state an opportunity to gauge with reasonable accuracy the expenditure to be incurred, the employment to be given and the results to be accomplished. In addition, it would enable Congress to appropriate what was needed, when it was needed. With a comprehensive frontal attack on the condition of unemployment under way, the first and most vital phase of the New Deal objective of a complete and enduring fulness of opportunity for every willing American would be a definite hope.

With this thought in mind why not, while seeking to preserve what has been gained, press the work program and complete the coding later. Come on, Uncle Sam, be logical. All the codes in the world are useless unless there is work. Let us spend the same energy in placing people on useful work that General Johnson and others did on codes. Why not appoint a single Director of Public Works with the same unique authority the General had.

(Think it over).

STATUS OF THE ENGINEER

As Discussed by Engineering Institute of Canada

Stature is More Appropriate Term

According to J. B. Carswell
Courtesy of The Engineering Journal (Canada)

WITH regard to the status of the engineer in his own profession, it is the writer's opinion that the heading for the papers submitted on the above topic should not have included the word "status" at all. It would have been better to discuss the "stature" of the engineer, because there is a great difference between his stature and his status.

This abstract thing called "status" indicates someone at rest, someone who has ensconced himself in a certain position, and surrounded himself with barriers and fortifications, and who is not likely to move out of that position for some considerable time.

The other word, "stature," which is a materialistic and concrete quality is more appropriate; you can have stature and still be growing and walking forward amongst your fellowmen, but stature in the engineering profession or in any other profession can only be acquired by hard unselfish service to the public.

Why are we, as engineers, always so worried about our status in the engineering profession? Is there not a little nervous fear that our importance may be overlooked? Many engineers are fond of analyzing the position of the engineer in society and it is an interesting occupation to prove conclusively to yourself that without the engineer society could not exist. However, if you happened to be a law student, you could similarly analyze the situation and prove that society could not exist if it were not for law and order controlled by the legal fraternity. The truth of the matter is that all occupations are merely cogs in the wheels of industry, their usefulness is measured in units of cooperation, and that is where the average engineer falls down.

Last year the speaker criticized the agenda of the annual meeting of The Engineering Institute, and this year it should again be criticized.

Engineers are lacking in perspective. This is the year 1935, when the political pot is boiling as it never boiled before, and when the economic structure of Canada, and every country in the world, is under a severe strain. The old established orders are changing; the capitalistic system is being attacked from every side; in some countries of the world the capitalistic system has ceased to exist. Our government in Ottawa has facing it at the moment problems of vital importance which will affect every man and woman. Today, the representatives of four thousand professional engineers in the Dominion of Canada meet, a group which is supposed to contain — and does contain without doubt—some of the best trained minds in the country. Now, the government in Ottawa is after all just a group of business men, who are at this time seeking for good intelligent public opinion as a guide for them in their actions. And what do the representatives of four thousand engineers do? The first day of their meeting is devoted to a discussion of gaseous conductor lamps and bascule bridges. What interest has the government in these subjects? And the third session—the third session is much better—something is actually being done for the public in the way of discussing the water situation and the irrigation problems out west. Incidentally there was an editorial in the paper a couple of days ago congratulating The Engineering Institute upon tackling this problem.

But, where does this group of four thousand men stand in connection with such items as unemployment insurance, old age pensions, and all the other social problems confronting the country at the present time? What are their views on the railway problem? It has been said on the best authority that the railway problem will wreck the credit structure in this country, unless a reasonable solution is found. Where do engineers stand on the housing problem. Substantially the same class of houses are being built today as one hundred years ago. The modern method of mass production which has made such vast changes in the production of everything else in this country has never yet been applied to the building of houses. Yet it is quite possible to build a house or a factory and apply the same method to its construction as is applied to the building of a Chevrolet car, and still erect a structure which will last and lose none of its originality.

Why is it necessary to go to Indiana, quarry tons of stone out of the solid rock, haul it a thousand miles, and finally hoist it three hundred feet into the air to form the wall of a modern hotel, when fifty other materials could be mentioned which would serve the purpose better, would be cheaper, and would impose on the steel supporting structures only about one-tenth of the weight? Why is this done? The answer is twofold. First, because our fathers and our grandfathers and our great-grandfathers did it before us, and secondly because the engineer, who should be tackling this problem, has for generation after generation treated the subject with contempt and neglect.

Who built the aqueducts in Rome? History says that Claudius Cæsar built them, but while Cæsar was in Britain fighting the Picts and the Scots there was somebody in Rome who knew the first principles of design and hydraulics, and built the aqueducts leading into Rome which stand there today, yet his name does not come down in history.

The engineer was then and is today for some reason or other always taking a back seat, retiring in modesty. Why does he do so, when at the same time he is faintly conscious of his own superiority over his lay associates. Out of that faint consciousness develops a little cynical attitude towards humanity, a feeling sired by introspection and mothered by idealization.

(*Continued on page* 22)

FEDERAL RELIEF PROGRAM

A STATEMENT OF PRINCIPLES

MANY DETAILS STILL UNDEVELOPED

COMPENSATION CERTAIN TO BE A PROBLEM

FOR the benefit of engineers throughout the country the following brief resumé of the national work relief program is offered as a consensus of opinion resulting from inquiries:

PRINCIPLES

1. This is a work relief appropriation and not a public works appropriation.

2. The appropriation is intended to place the 3,500,000 employables now on relief jobs on a security wage basis. The program is not designed as a pump-priming measure nor is it intended to give extensive employment to persons not on relief jobs. Current press reports have in some cases confused public thinking on this matter.

PROGRAM

A. *Cities and Villages:*

It is fairly definite that funds will be available to cities and villages on a loan and grant basis for construction projects conforming to the general features of the program. The amount of grant and the rate of interest have not yet been determined but the minimum will be the old 70-30, 3 or 4 per cent basis. The loan part in many cases could be floated through private channels—thus relieving the 4 billion fund for this loan.

It is definitely known that there will not be a substantial amount of borrowing by cities and villages for the reason that cities and villages as a whole are not able to borrow. Therefore, most of the program will be the regular Federal 100 per cent grant work relief phase. This conclusion is well accepted by Governmental leaders in spite of what appears in the press. In certain large cities, as in New York, it is probable that borough or county agencies may be delegated to direct and control work.

B. *Projects:*

1. Loan and Grant (Old PWA type). Practically any construction project with a relatively good direct labor cost ratio should be eligible for a loan and grant. This is especially true if a city floats the loan part privately.

2. Work Relief. These projects will constitute, so far as number of men employed is concerned, 90 per cent of the program when it is under way. The projects will be those with a very good (high) direct labor cost ratio. Big construction projects (schools, public buildings, etc.) are out of the picture in this phase of the Federal set-up. Street repair, some water and sewerage work, together with park and playground projects, are the most suitable. Also, there are white collar projects. In a nutshell, 90 per cent of the projects will be of the old CWA type together with these of the character now being done under the existing FERA work relief system.

That the above will prevail comes about mainly because of mathematical factors. The Government has from $900 to $1,100 per man per year to put the program over; $600 to $750 is the average wage part, leaving $300 to $350 for materials. This fact alone dictates the type of projects.

3. Highways, Streets and Grade-crossing Elimination. Four hundred millions has already been alloted under this heading. The rules under which this is to be expended should be out shortly. Presidential assurance has been given that a great deal of the work will be expended within or near cities since that is where the relief load exists.

4. Housing. Two hundred and fifty millions has been allotted for low-cost municipal housing in about fifty cities. This is a Federal proposition with the Government selecting the community needing housing, acquiring the land, building the project and managing the same after construction.

5. CCC camps. Municipal relief rolls will be aided by the additional quotas of young men for CCC Camps which have been authorized.

C. *Organization and Procedure:*

The organization and procedure under which cities and villages must operate is pretty clear at this stage. There are just two main Federal agencies with which cities and villages must deal—Work Progress Administration and state PWA offices. In order to crystallize the organizational and procedure part, the subject is outlined herewith by types of projects.

1. Loan and Grant Projects. The Government is utilizing the old PWA set-up for loan grant projects. Therefore, cities and villages desiring to apply for loans should submit applications at once to the state PWA office. Forms will probably be available shortly but cities and villages can now submit applications if they desire knowing that they will at least get the old 70-30, 3 or 4 per cent proposition.

2. Work Relief Projects. This will constitute 90 per cent of the program. To carry it out, the Works Progress Administration has been created with Harry L. Hopkins at its head, and he will be the key figure in the general program. State Works Progress Administration Directors will be designated rapidly. As a matter of fact, directors for more than one-half the states have already been appointed. In turn, local Works Progress Offices will be created. There are about 320 areas throughout the country where an acute relief problem exists. Most of these are the urban centers. Deputy Works Progress people will be appointed for these areas and they will report to the State Director.

(*Continued on page* 23)

CONSERVATION AND WORKS

NEW DEPARTMENT TO REPLACE INTERIOR

SUPPORTED IN COMPREHENSIVE BRIEF

By
HAROLD L. ICKES, *Secretary of the Interior*

THE proposed title of Department of Conservation and Works would be more indicative of the normal functions of the Department of the Interior. Originally established as the Home Department for the internal development of the country and to promote the welfare of the people, the Department of the Interior has been largely responsible for the social and economic transformation of the West from arid unproductive areas into fertile farms and populous towns which afford profitable markets for the Eastern manufacturer. Under the guidance and regulation of the Department vast mineral wealth has also been uncovered and utilized. Without this epoch of settlement and utilization of our natural wealth, the West would still be practically unoccupied and our Eastern industrial expansion would thereby have been correspondingly restricted.

The cycle of flush exploitation, however, has been completed and as a Nation we must direct ourselves to conserving the unentailed remainder and to preserving the developments of technical skill and human labor. This policy is necessary not entirely for the benefit of future generations, as was urged by conservationists of a few decades ago, but for the preservation and well being of the present population. Modified rainfall, lowering water table, soil erosion and stream diversion have already brought disaster to great numbers of people and the threat of the future causes discouragement and weakens initiative among formerly prosperous groups whose livelihood has been affected by these unfavorable conditions. The whole question of conservation has changed from one of idealism to one of practical application.

The Department of the Interior for many years has been pre-eminent in conservation matters and if a national conservation policy is to be seriously followed, as self-preservation demands, it is the natural agency in which to concentrate such necessary functions. And by conservation I do not mean the withholding from use of our natural resources; I mean their prudent use in the interest of the country.

The designation of the several Executive Departments can note their place in orderly Government. They owe their genesis to a particular need and they were organized and named to serve a distinctive purpose. The primary concern of the State Department, for example, is foreign relations; the Treasury Department, fiscal affairs; the War and Navy Departments, military defense; the Department of Justice, jurisprudence; the Post Office Department, handling the mail; the Department of Agriculture, agricultural research; the Department of Commerce, business industry, and the Labor Department, matters relating to labor.

The Department of the Interior has always been concerned chiefly with internal affairs, which comprehend natural resources, such as minerals and water and land, upon which we depend to sustain life and promote economic growth. It has long been known as the land department of the Government. It has been foremost in the promotion of conservation legislation. The laws for the protection of the public domain have been sponsored by it as each succeeding abuse arose. The general leasing law of February 25, 1920, which prevents monopolistic control of our basic mineral resources and provides for their proper development, was initiated by the Department of the Interior. The oil scandals did not occur under the general leasing law, however, but under a clause in the naval appropriation act of June 4, 1920, a circumstance that demonstrates the unwisdom of legislating outside of the proper jurisdictional field.

Some of the more important laws of a conservation nature initiated or advocated by the Department of the Interior include the reclamation of swamp lands, the classification of public lands, the creation and administration of forest reserves, the reclamation of arid lands, the distribution of electrical power, the preservation of American antiquities, the reservation of coal deposits, water-power sites, and mineral deposits, the leasing of coal lands in Alaska, the creation and administration of national parks, the leasing of public lands for potash, coal, phosphate, sodium, oil, fur farming and grazing, and the unit operation of oil and gas lands. (See Exhibit 1).

The older departments, such as State, War, Navy, Treasury, Post Office, Justice and Interior at first answered the fundamental requirements of government, but subsequently internal expansion called for a fuller consideration of particular activities than was practicable under departments organized for other primary purposes. Thus were established the Department of Agriculture, Labor, and Commerce. Each of these departments was created to administer one specific subject pertaining to internal affairs. The importance of agriculture in the economic structure, for example, was responsible for the formation of the Department of Agriculture in 1862 after repeated recommendations by Secretaries of the Interior for thirteen years, "the general design and duties of which," in the language of its organic act, "shall be to acquire and diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word, and to procure, propagate and distribute among the people, new and available seeds." (U. S. Code, Title 5, Par. 511.) Similarly, the Departments of Commerce and Labor were created for other specific pur-

(*Continued on page* 23)

A COMMENTARY
ON
NATIONAL ECONOMICS AND THE ENGINEER
Industrial Democracy versus Regimentation

By
D. B. STEINMAN

"THE soul of the modern age and generation is the engineer and his work." The engineer has created the Machine Age—our present Industrial Civilization.

America is an Industrial Democracy. Engineering Progress + Individual Initiative = Industrial Democracy. Under this economic system, there has been unprecedented development of national wealth and individual standard of living.

In fifty years (1880-1929) our national wealth has increased nine-fold (from $43 B to $361 B). In twenty years (1909-1929) our national income has increased three-fold (from $28 B to $84 B).

Under Industrial Democracy, this country has produced since 1776 three times as much wealth as the whole world had been able to produce in all the centuries up to 1776. This wealth in the U. S. has been so widely distributed that the average man enjoys a standard of living elsewhere unknown.

In 1929, the average income per capita in all civilized countries was $153; in the U. S. it was $657, or more than four times as high. In 1920, the average retail sales in the U. S. was $407. This figure is higher than the average income per capita in any other country of the world (except Canada).

With only 7% of the world's people:

1. U. S. has more purchasing power than all Europe combined.

2. Americans have created and own more than half the world's wealth.

3. U. S. consumes half the world's coffee, half of its tin, half of its rubber, one-fourth of its sugar, three-fourths of its silk, one-third of its coal, two-thirds of its crude petroleum.

From 6% of the world's acreage:

1. U. S. harvests more than half the world's foodstuffs.

2. U. S. extracts 60% of the minerals of the world.

3. U. S. has half the communication facilities of the world.

4. U. S. has nearly half the railways of the world.

5. U. S. has developed and uses nearly half the world's electrical energy.

6. U. S. produces 92% of the world's automobile output, and has provided 600,000 miles of paved highways for this triumphant advance in individual transportation.

American prosperity has been built on the pioneer spirit—individual enterprise, industry and thrift.

Those who earned more than they spent, or who were willing to spend less today that they might have more tomorrow, either loaned or invested their savings to start new, creative business.

If you buy a bond, you are lending money to some group of men to commence or expand a business. If you buy stock, you are pooling your savings with other men and becoming their partner. If you have a savings deposit, your banker lends your money at a higher rate of interest for use in some business enterprises. If you buy an insurance policy, the management of your company puts your premium to work. In every case your savings go into productive use to create employment, develop resources, enlarge business activity, and expand the nation's wealth.

Every thrifty, industrious and prudent man or woman who owns a bond, mortgage or note, or a share of stock, or an insurance policy, or has a dollar in the bank, is a capitalist in the real meaning of the word.

Individual initiative, thrift, and investment should be encouraged and rewarded, not discouraged and penalized.

It is a paradox that those who are most vociferous for so-called liberalism and the rights of man are the first to advocate materialistic dictatorial systems of control involving the surrender of human liberty and individualism.

Until human nature is transformed, freedom of individual initiative is a necessary condition for new progress. A "planned society" involving any form of dictatorship or regimentation is not the answer.

Certain oscillations called depressions appear, for the present, to be an unavoidable concomitant of the accelerating onward and upward sweep of the curve of progress. Even though the bottom of each depression is generally higher than the preceding peaks, it is true that these fluctuations are painful.

A leveling process is, of course, possible. A system of rigid control of human effort and distribution might conceivably eliminate the distressing periods of lagging adjustment, but such cure of our ills would be at too great a sacrifice. Human psychology would be violated, incentive dulled, individual efficiency reduced, freedom of initiative destroyed, enterprise shackled, and continued further progress throttled. Are we willing to pay such price?

If the promises of Technocracy, or Communism, or Fascism, or similar plans of a regimented society could be fulfilled, it would be at too great a cost to liberty and individuality.

Human wants, as distinguished from needs, cannot be measured and rationed out.

With mass production, uniformity and rationing, a

(*Continued on page* 25)

A State Society of Note

OHIO ORGANIZATION RAPIDLY PERFECTED

JOINED THE N. S. P. E. IN FEBRUARY, 1935

Ohio Society of Professional Engineers

SHOWING LOCAL SOCIETIES AFFILIATED WITH
STATE AND NATIONAL SOCIETIES

1 **Maumee Valley Society of Professional Engineers.**
2 **Toledo Society of Professional Engineers.**
3 **S. O. S. Society of Professional Engineers.**
4 **Elyria-Lorain-Sandusky-Norwalk Society of Professional Engineers.**
5 **Cuyahoga County Society of Professional Engineers.**
6 **North East Ohio Society of Professional Engineers.**
7 **Mahoning Valley Society of Professional Engineers and Surveyors.**
8 **Akron Society of Professional Engineers.**
9 **North Central Ohio Society of Professional Engineers.**
10 **Ohio Northern University Society of Professional Engineers.**
11 **Midwestern Ohio Professional Engineers and Surveyors Association.**
12 **Marion Society of Professional Engineers.**
13 **Central Ohio Society of Professional Engineers.**
14 **Zanesville Regional Society of Professional Engineers.**
15 **Canton Regional Society of Professional Engineers.**
16 **Steubenville Society of Professional Engineers.**
17 **Belmont Regional Society of Professional Engineers.**
18 **Morgan-Noble-Washington Society of Professional Engineers.**
19 **Athens Regional Society of Professional Engineers.**
20 **Franklin County Society of Professional Engineers.**
21 **Springfield Society of Professional Engineers.**
22 **Troy Society of Professional Engineers.**
23 **Dayton Society of Professional Engineers.**
24 **Southwestern Ohio Society of Professional Engineers.**
25 **Hamilton County Society of Professional Engineers.**
26 **Southern Ohio Society of Professional Engineers.**
27 **Portsmouth Society of Professional Engineers.**
28 **Ironton Society of Professional Engineers.**

THE ENGINEER AND CALAMITY

DUST STORMS PRESENT NEW PROBLEMS

REFORESTATION AND ITS DIFFICULTIES

By
LEOPOLD LEITNER

"SOME explorers are convinced that the desert of today originated under different climatic conditions from those which exist there now. In their opinion the forms of desert are more or less fossil," writes Mr. Walther in his book "Das Gesetz der Wuestenbildung" (The Law of Desert Formation).

Mr. Walther, himself an explorer of wide experience is, however, of the opinion "that the present occurrences in the desert are entirely sufficient to explain the formation of desert regions." The average person is inclined to look at geology in much the same way as at a collection of interesting fairy-tales; the pleistocene and other periods are things of the past; he complacently feels himself in a geological millenium which will not be disturbed until the end of time. But every so often he is grimly reminded that the everlasting forces of nature are not at rest, that, as Schiller says "die Elemente hassen das Gebild der Menschenhand."

Civilization is, generally speaking, man's struggle against nature. In some fields of human endeavor, namely in agriculture and forestry, this claim needs modification. In these fields more often than not man has aided nature's destructive work. On the Balkan Peninsula in Europe, near the Adriatic Sea, is a range of mountains called the Karst Mountains. They are, for the most part, bare limestone rock. It has been said that only a few hundred years ago these mountains were covered with forests, whereas today the monotony is relieved only by occasional posts for the travelers to get a hold of when overtaken by a storm.

In our own West one meets occasionally with names of localities such as "Big Timber"; it is understood that not a blade of grass can be seen, let alone big timber. The early practices of robbing the soil and of cutting down the forests is well enough known to need no comment. The consequence is our recent dust storms. A certain amount of soil-denudation must be placed on the debit side of engineering. River regulation, road building, facilitates the flow of water; this fact in combination with the stripping of the soil of its vegetation increases water-erosion.

According to a recent article in the N. Y. Times, citing the "national inventory" compiled by the Mississippi Valley Committee and the National Resources Board, about 10% of the 1.9 billion acres of the United States are unproductive. In this unproductive area 35 million acres have been completely destroyed by erosion, 125 million acres have lost most or all of their topsoil and 100 million acres are in danger. This inventory was taken before the recent dust storms.

What makes the condition worse is the cumulative character of what we may call "desert formation." Says Mr. Walther in the above-mentioned book: "Every desert represents a storm center in which the storms concentrate and from which they penetrate into the neighboring pluvial or humid regions." We must also bear in mind that where the area is sufficiently large a large portion of the local precipitation is of local origin. Denuded areas cause a decrease in the local circulation of water, which, in combination with wind forces, tends to increase the extent of the denuded area. Unless counteractive constructive measures are taken, it is not unlikely that the dust storm menace may become even more pronounced. Evidently, the problem will not be solved by sending farmers to Alaska.

The ultimate solution of the problem is, of course, reforestation. But it also must be plain that the larger the damage is that has already been done, the more it becomes an engineering problem. If we look at the isohyetal map of the United States we find a range of precipitation of from 3″ to 130″ per year. The 3″ rainfall is in the Great Basin and is, of course, insufficient no matter how well distributed throughout the year. But the present menace does not come from that region; it comes from east of the Rocky Mountains, from regions with isohyetals of 15″-25″. In this territory engineering could devise means to have a fair distribution of water throughout the year. It is even plausible that, after this vast area becomes replanted, the yearly precipitation would be increased and better distributed through the seasons. It would indeed be an engineering method for regulating weather.

The engineering work involved is more enormous than would appear at first. The first thought naturally would be to periodically inundate large areas. Such a plan would involve a net of canals compared to which the canalizations of the ancient world would look like a child's game. We naturally shrink from such an enormous plan, since our habit always has been to destroy in a short time what nature took millions of years to build.

The chief objection to a large scale preservation plan would come from the practical business man who can show by black on white that such a plan is "uneconomical." His question is: Who will pay for it? He will say: It would increase our national debt by so and so many billions. The same practical economist will also show that it is cheaper to place people on home relief than to engage them in a public works program. Reversing his way of reasoning we could employ the following figures: By taking ten million unemployed with an earning capacity of $5.00 a day and 300 working days a year, there is a loss of 15 billion dollars a year; at a 5% interest rate, this represents a capital value of 300 billion dollars; our present total national wealth is incidentally about the same amount. The same practical business man, however, would not hesitate to engage in a war for the protection of world

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THE
TULANE UNIVERSITY
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NEW ORLEANS

ITEMS OF GENERAL INTEREST

NEWS, REPORTS, COMMENTS

NATIONAL SOCIETY ACTIVITIES

Correspondents and readers are invited to submit for publication items of interest to the professional engineer of the country. Such material should be forwarded as quickly as possible in order to keep news up to date.

SOCIETY APPEALS RATES

The National Society has appealed to President Roosevelt on the question of the proposed rates of compensation for professional men. Secretary Conlon has addressed all State Societies asking them to "Wire or write immediately to your representatives vigorously opposing rates of compensation for technical men and professional men advocated in President Roosevelt's executive order on Job Relief Program announced today."

The following press release appeared in whole or in part in papers throughout the country:

The National Society of Professional Engineers representing professional engineers in all branches of the profession registered their vigorous disapproval to the President and Congress of the rates of compensation for professional men as indicated in the Executive Order of President Roosevelt on the Job Relief Program.

This announcement was made today by Mr. Willard S. Conlon, Treasurer and Acting Secretary of the Society located in Washington. Mr. Conlon stated that these rates will destroy the already weakened morale of the members of the engineering profession and lower the standards of the profession which played a major part in the building of modern civilization.

He also stated that the engineers feel that there is absolutely no justification for the rates indicated and that the method of attacking the problem is wrong. He advised that it had been recommended by the National Society of Professional Engineers that all public works be done by contract and there is a growing realization that that recommendation is the proper solution to the problem confronting the country today. No one can question that this is the best method of attack and President Roosevelt, himself, frankly stated that relief work on the whole is non-productive. It is not conducive to a transfer of persons from government to private payrolls. The first step in this direction is overlooked when the contractors are eliminated. Herein lies the great weakness of the method. If a great nation is to create additional wealth, it must direct the efforts of its men into channels resulting in permanent improvement and development of its potentialities. Throughout the country, and especially in the East, there is a growing realization of the ultimate advantages of contract work.

Where once, not so far back, architects, engineers and labor leaders made such contentions only to be rebuffed by self-styled *social experts*, who on a basis of training and experience are as qualified to pass judgment on organizing and executing work projects as they would be to direct the maneuvers of an army, we now find official and civic organizations con-

(*Continued on page* 22)

PRESS COMMENTS

The following are excerpts from news items which recently appeared in Washington newspapers:

"This Is Not Relief"

"Wage rates under the four billion dollar work relief program, as fixed by the President's executive order recently are disappointing. Apart from several wide exemptions permitting even lower pay, eight classifications for unskilled and semi-skilled labor are below $30 a month including one of $19.

"Only one member of a family is allowed employment. So a family in the $19 a month class must be supported on $228 a year—even if the family head receives steady work for the entire year, which is highly improbable. A family cannot be supported anywhere in America on $228 a year, which is less than 63 cents a day.

"Unfortunately it is not possible to provide the $2,500 a year which Government experts estimate is required to assure a 'moderately full life' for the typical American family. But certainly no less than one-seventh of this budget, or $1 a day income, should be the absolute minimum. Even that $365 a year would mean privation, hunger, malnutrition for adults and children. When the figure is reduced to $228 or less a year, as in the executive order, we fall far below the danger point of public health, public morals and public order.

"With the general theory of the executive order—which varies wage scales through eighty classifications in relation to existing wage differentials in geographic regions, size of population, and skill—there should be no dissent. Likewise the principle of keeping most of the work relief scales well below prevailing private rates is necessary to prevent large permanent work relief rolls and to encourage private re-employment. The scale of highly trained and educated professional and technical workers, which ranges from $94 a month to as low as $39, is nothing for them to cheer about. It may be justified, however, by the emergency and the fact that this is only relief.

"But $19 a month, or 63 cents a day, for support of a family is not relief. It is slow starvation. In our judgment it cannot be justified."

"Work Wages Stir Torrent of Protests

"Vigorous disapproval of the wages for professional and technical men fixed by the President's order was voiced by the National Society of Professional Engineers. Willard S. Conlon, treasurer and acting secretary of the Society, predicted the rates will destroy the already weakened morale of the profession and would lower its standards."

"F. D.'s Relief Wage Rates Bring Protest

"Professional engineers through their society here added their protest today against wages provided for them in the

(*Continued on page* 22)

WASHINGTON

Headquarters Makes Appeal

We wish to perform our highest and most legitimate function by serving as an agency for the dissemination of data and other pertinent information for the amelioration of the social and economic status of the engineer. The National Society is vitally interested in the various problems confronting the engineer, both local and national, and your kind suggestions and constructive criticisms will be conducive to a better understanding of the problems and their subsequent solution.

In order to achieve the objectives of the Society each of its members must perform his part in the campaign religiously and spontaneously in order successfully to realize the benefits to be derived with a minimum of effort. The engineer has not been, nor will he be, recognized and accorded his proper place in the scheme of things until he asserts himself through a united front. The ground work has been laid and the law of compensation is no less applicable to this problem than to others. The benefits you derive will be in direct proportion to the efforts you expend.

We are on the eve of a new era for the engineers, a renaissance, and a militant campaign is being waged to insure it. Your active participation is essential to its ultimate success. We feel sure you will take up the challenge and are indeed grateful for your every consideration. Please feel free to avail yourself of the facilities of this office.

Willard S. Conlon,
Acting Secretary, N. S. P. E.

AN UNFORTUNATE STATEMENT

By Dr. Wm. E. Wickenden

In a recent article by Dr. Wm. E. Wickenden of the Case School of Applied Science, appears the following statement:

"The profession may sit as judge of standards and objectives without putting the colleges into a straight jacket.

"The Engineers' Council for Professional Development is adapted admirably to this function. In time, the standards of attainment it may set for full professional recognition may make public licensure of relatively nominal significance."

Dr. Wickenden ignores the fact that the public interest must come before professional, technical or personal interest. The protection of life, health and property is a duty and a function of the State and not of any private body or any institution of learning.

Statements of this type never come from lawyers or doctors and only serve to lessen the trust which people should have in the professional man. The object of licensing is to protect the general public, not to serve the aims or ambitions of educators or private interests.

(*Continued on page* 22)

STATE ACTIVITIES REPORTED

"Three Additional States Pass Legislation"

The American Engineer again asks the several States to submit material for each issue. Every Society is invited, in fact urged, to present full reports of the activities of Chapters or affiliations. Correspondents are requested to forward news items immediately after meetings or occurrences take place.

ARIZONA

Revised Law—1935

The recent amendment to the Registration Act of Arizona, which act replaces that as amended in 1928, becomes effective on June 20th. For the information of engineers generally, and those of Arizona specifically, the amended act is reprinted herewith:

State of Arizona
Twelfth Legislature
Senate
Regular Session

CHAPTER 32
SENATE BILL NO. 38
AN ACT

Relating to the registration of architects, assayers, engineers, and land surveyors; and creating the state board of technical registration, and repealing article 1, chapter 58, Revised Code of 1928.

Be it enacted by the Legislature of the State of Arizona:

Section 1. *Short title.* This act shall be known and may be cited as the "technical registration act of 1935."

Section 2. *Definitions.* For the purposes of this act, and unless otherwise required by the context:

(a) "Board" shall mean the state board of technical registration.

(b) "Architect" shall mean a person other than an engineer who prepares drawings or specifications or supervises but does not superintend the construction of buildings and structures, as an authorized agent of the owner thereof.

(c) "Assayer" shall mean a person who analyses metals, ores, minerals or alloys in order to ascertain the quantity of gold or silver or any other substance present in them.

(d) "Engineer" shall mean a person who, by reason of his knowledge of mathematics, the physical sciences and the principles of engineering, is qualified to engage in engineering practice. The term shall include all persons practising geology, but shall not include persons engaged in the manual operation of engines or like machinery.

(e) "Land surveyor" shall mean a person who engages in the practice of surveying tracts of land for the determination of their correct locations, areas, boundaries and description, for conveyancing and recording, or for the establishment or re-establishment of boundaries and the plotting of lands and subdivisions.

Section 3. *Requirements to practice architecture, assaying, engineering, or land surveying.* Any person desiring to practice the professions of architecture, assaying, engineering, or land surveying, shall first secure a certificate of registration as herein provided, and shall comply with all of the conditions prescribed in this act.

(*Continued on next page*)

OREGON

Considers Public Works Post

Robert E. Duniway, Secretary of the Oregon Society, has incorporated the following in his notice of the June 12th meeting:

"A short time ago we received a circular letter from the National Society of Professional Engineers quoting excerpt from Dr. Steinman's address before the convention of the New Jersey Association of Professional Engineers, held at Newark, March 16th. The subject of that address and the circular letter was the creation of a new cabinet post in the cabinet of the President of the United States, to be known as the Department of Public Works and to be directed by a Secretary of Public Works who should be a professional engineer. The idea of such an additional position in the cabinet originated during President Hoover's term and has been the subject of more or less discussion among engineers from time to time. It is felt by the office of the National Society of Professional Engineers that the project is worthy of their support. After some discussion at our board meeting, April 18th, the board directed the Secretary to familiarize our membership with the proposal through the means of a circular letter and to advise them that further discussion on the subject would be entertained at the regular quarterly meeting of the Society to be held the second Wednesday in June, that is, June 12, 1935."

To Study Municipal Affairs

From the above noted notice the following has been excerpted:

"At the board meeting of April 18th it was agreed that we would benefit from more activity on the part of our Public Relations Committee and that it would be fitting and proper for us, through the agency of this committee, to review the technical aspects of proposed municipal improvements and developments sufficiently so as to formulate in definite shape a report representing the majority opinion of our members. Whenever a really representative minority opinion developed, that opinion could also be expressed in the report. The committee shall feel free to draft the services of any and all members in the organization and to avail itself of the resources of the society to accomplish its work. Mr. F. L. Roth, board member of this committee and acting chairman, was directed to convene the committee in the near future and to include such other members as might be ready to join the committee in its work, their first duty being to organize themselves, define their own duties in written form and report to the board one or two projects on which they are ready to begin study so

(*Continued on next page*)

OHIO

Cites Activities

From Perry T. Ford, Chairman of the Membership Committee of the National Society, comes a most instructive communication:

"I am submitting herewith a resumé of the things accomplished in Ohio in the last six months. I am submitting this to serve as an index as to what can be done when engineers become thoroughly aroused to their own possibilities.

As graphically illustrated on the enclosed map you will note that twenty-eight local societies have been formed. These societies coordinate their efforts with the Ohio Society of Professional Engineers and the Ohio Society, in turn with the National Society.

Following is a list of accomplishments recently consummated:

A State-Wide Committee known as the Standardization Committee has completed:

(1) A uniform schedule of fees to be charged for various types of engineering service.

(2) A standard minimum fee for surveying service.

(3 Uniform and standard contracts to be used by engineers in private practice.

(4) Code of Ethics prescribed for all types of service.

We are happy to record the following accomplishments in legislative matters affecting the engineers:

Senate Bill No. 174 passed both the House and Senate with only one dissenting vote and has been signed by the Governor and will become operative on August 14, 1935. This Bill was written by the State Board of Registration for Professional Engineers and is designed to clarify the Law and strengthen it in certain places. The principal feature provides that the State Board retain all of the funds for its use, paid to the Board in the form of application fees and renewals, for the exclusive use of the board.

House Bill No. 97 has passed the Senate and the House and is ready for the Governor's signature. This bill provides that all County Surveyors shall be henceforth called County Engineer and that he must be a Registered Professional Engineer and Surveyor.

Senate Bill No. 58 designed and promoted by the insurance companies to exempt insurance companies from any and all provisions of our act was killed in the House Committee on Insurance.

Senate Bill No. 154, sponsored by the Taft Committee, passed the Senate, was defeated in the House. This bill was designed for an optional form of government to be adopted by the various counties. The plan provided for a department of public works for each county to be headed by a registered engineer.

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OREGON

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that the Board of the Professional Engineers may assign a study project and then work can begin."

Use of R. P. E.

David Donaldson, of Portland, has suggested to the National and State Societies the use of the letters R. P. E. (Registered Professional Engineer) after the name of a practising engineer. Mr. Donaldson intimates the following of a European custom is worth while. The proposal has struck a responsive chord in several parts of the country.

IOWA

New State Society Planned

As a result of the decision of the Iowa Engineering Society not to affiliate with the National Society of Professional Engineers the formation of State professional organization appears imminent. The vote on the question of affiliation which was 104 votes against, and 82 for, indicates that the nucleus of a strong strictly professional body is assured.

In reviewing the vote it seems obvious that a majority of the licensed members favored the affiliation. However, the votes of persons ineligible for membership in the National Society were doubtless of as much weight as those of registered engineers.

The suggestion has been made that a professional engineers' section of the Iowa Society might prove a solution. This does not appear practicable as the status of the Society as a whole would not legally be one that could be termed professional. Furthermore, the influence and recognition of such a body would not be comparable to that of a strictly professional society.

The problem, similar to one which prevailed in Connecticut, can best be solved by the formation of a strictly professional body.

The Executive Committee of the National Society will consider the granting of an Iowa Charter at its next meeting.

ARIZONA

(*Continued from page* 13)

Section 4. *Creation of board.* The state board of technical registration is hereby created. Said board shall be composed of seven members, one of whom shall be the dean of the college of mines and engineering at the University of Arizona and six of whom shall be appointed by the governor, and shall be as evenly representative as may be of the professions of architecture and engineering, and shall possess the qualifications prescribed in section 5. The terms of office of said members shall be three years each, and they shall be so appointed that the terms of two members shall expire each year. The present members of the state board of registration shall be the members of the state board of technical registration until the expiration of the terms for which they were appointed respectively. The governor may remove any member of the board for misconduct, incapacity, or neglect of duty. Any vacancy shall be filled only for the unexpired portion of the term.

Section 5. *Qualifications of board members.* An appointive member of the board shall be at least thirty-five years of age, have been a resident of this state for at least three years immediately preceding his appointment, have had at least ten years' active professional experience as an architect or engineer, be of recognized good standing in his profession, and be registered as provided in this act.

Section 6. *Compensation of board members.* The members of the board shall receive no compensation for their services as such, but shall be reimbursed for the actual and necessary expenses incurred in the performance of their duties, and their certificates of registration shall be annually renewed without payment of the renewal fee.

Section 7. *Organization; meetings; quorum.* The board shall annually elect from among its members a chairman, a vice-chairman, and a secretary. It shall hold at least two regular meetings in each year and such special or called meetings as the by-laws may provide. Not less than four members, of whom at least one shall be an architect and two shall be engineers, shall constitute a quorum for the transaction of business.

Section 8. *Powers and duties of the board.* The board shall have power and it shall be its duty to adopt by-laws and rules for the conduct of its meetings and the performance of the duties imposed upon it by law; to adopt an official seal for the attestation of certificates of registration and other official papers and documents; to consider and pass upon applications for registration; to hear and pass upon complaints or charges; to compel the attendance of witnesses, administer oaths, and take testimony concerning all matters coming within its jurisdiction; to keep a record of its proceedings; to keep a register which shall show the date of each application for registration, the name, age, qualifications, place of business and residence of the applicant, and disposition of the application; to keep a list which shall show the name, place of business and residence of each registrant; and to do all other things necessary to carry out the purposes of this act.

Section 9. *Report; copies of lists of registrants to be filed.* In January of each year the board shall make a report to the governor, which shall be accompanied by a copy of the list of registrants. A copy of such list shall also be filed with the secretary of state, and a copy with the clerk of the board of supervisors of each county.

Section 10. *Secretary of the board; duties; salary.* The secretary shall be the custodian of the records of the board, receive applications for registration and lay them before the board, file complaints with the proper officials against violators of the technical registration act, assist in the prosecution of such cases, and perform such other duties as the board may prescribe. He shall receive such salary as the board may determine, not to exceed one hundred dollars per month.

Section 11. *Eligibility requirements.* An applicant for registration as architect or engineer shall not be less than twenty-five years of age and of good moral character and repute. If an applicant for registration as an architect or an engineer, he shall have engaged actively for at least eight years in architectural or engineering work of a character satisfactory to the board, but each year of teaching of architectural or engineering subjects or of study satisfactorily completed in an architectural or engineering school approved by the board, up to a maximum of five years, shall be considered equivalent to one year of active engagement. If an applicant for registration as an assayer or a land surveyor, he shall have engaged actively for at least four years in assaying or land surveying work of a character satisfactory to the board, but each year of teaching of assaying or land surveying or of study satisfactorily completed in a school approved by the board, up to a maximum of two years, shall be considered equivalent to one year of active engagement.

Section 12. *Registration fees.* The following fees shall accompany all applications for registration: If for a certificate as architect or engineer, fifteen dollars; if for a certificate as assayer or land surveyor, ten dollars; if the applicant holds an unexpired certificate of registration issued by the authority of a national bureau of registration, or a certificate of reciprocal registration issued under the regulations of the national council of state boards of engineering examiners, five dollars.

Section 13. *Application for registration; consideration; return of fee in case of rejection.* A person wishing to practice architecture, assaying, engineering, or land surveying shall make application for registration on a form prescribed by the board, subscribed under oath and accompanied by the registration fee. If the evidence submitted satisfies the board that the applicant is fully qualified to practice the profession for which registration is asked, it shall give him a certificate of registration, signed by the chairman and the secretary and attested by the official seal. If in the judgment of the board the applicant has not furnished satisfactory evidence of qualifications for registration, it may require additional data, or may require the applicant to submit to an oral or written examination. If the application is denied, the registration fee shall be returned, less the cost, as determined by the board, of considering the application.

Section 14. *Registration upon unexpired certificates.* The board may register without examination an applicant who holds a valid and subsisting certificate of registration issued by authority of a national bureau of registration, or by another state or foreign country having requirements for registration satisfactory to the board, or a certificate of reciprocal registration issued under the regulations of the national council of state boards of engineering examiners.

Section 15. *Renewal of certificates; penalty for failure.* All certificates of registration shall expire on the last day of December of each year, and shall be invalid after that date unless renewed by the payment of a renewal fee of five dollars. If not paid prior to the expiration date, the renewal fee shall be accompanied by a penalty of ten per cent for each month or fraction of a month of delinquency, but such penalty shall not exceed ten dollars. In the event that a registration has lapsed for three years, a new application, accompanied by the proper fee, shall be required.

Section 16. *Revocation of certificate; hearing; notice of findings.* The board

may revoke the certificate of any registrant found guilty of fraud or deceit in obtaining such certificate, or of gross negligence, incompetence, bribery, or other misconduct in the practice of his profession. Charges shall be in writing and sworn to by the complainant, and, unless dismissed without hearing, shall be determined within three months. A copy of the charges, together with notice of the time and place of hearing, shall be served on the accused not less than thirty days before the date set for the hearing. The accused may appear personally and by counsel, cross-examine witnesses against him, and produce evidence. If five or more members of the board find the accused guilty, his certificate shall be revoked, but may be reissued upon the vote of five or more members. The board shall immediately notify the secretary of state and the clerk of the board of supervisors of each county in the state of the revocation of a certificate or of the reissuance of a revoked certificate.

Section 17. *Seal to be used by registrant; document to be signed; unlawful use of seal or signature.* The board shall adopt and prescribe a seal for the use of registrants holding a valid certificate, which shall bear the legend "registered" and the name of the registrant. Plans, specifications, plats, or reports prepared by any such registrant shall be issued under seal and shall bear the signature of the maker. It shall be unlawful for a registrant whose certificate has expired or been revoked to use said seal, or to sign, stamp, or seal any document not prepared by him or his bona fide employee.

Section 18. *Exemptions and limitations.* Architecture, engineering, assaying, or land surveying may be practiced without compliance with the requirements of this act by: (a) An officer or employee of the United States, practicing as such; (b) a consulting associate of a registrant, if a non-resident who has no established place of business in this state and is qualified to practice in his own state or country; (c) an employee of a registrant or of a person exempt from registration, provided such employment does not involve direct responsibility for design, inspection, or supervision; (d) a non-registrant who holds an unexpired certificate of registration issued by authority of another state or country that has requirements for registration satisfactory to the board, provided such non-registrant shall inform the board in writing of his intention to practice and the approximate length of time which shall not exceed thirty days in any calendar year, that the work upon which he is to be engaged will consume; (e) a non-registrant who designs buildings, the costs of which does not exceed three thousand each or alterations, the cost of which does not exceed one thousand five hundred dollars for each building; or (f) a non-registrant who designs buildings or structures to be erected on property owned or leased by him or by a person, firm, or corporation that employs him on a full-time basis, provided such buildings or structures are intended solely for the use of the owner or lessee of the property and are not for sale, rental, or used by the public.

Section 19. *Exceptions.* A registered architect may engage in the practice of engineering or a registered engineer may engage in the practice of architecture, assaying, or land surveying, but only to the extent that such person is qualified under the provisions of this act and as such work may be necessary and incidental to the work of his profession.

Section 20. *Firm or corporation practicing.* No firm or corporation shall engage in the practice of architecture, assaying, engineering, or land surveying unless the work is under the charge of a registrant.

Section 21. *Public Works.* All drawings, plans, specifications, and estimates for public works of the state or any political subdivision thereof involving architecture or engineering shall be prepared by or under the personal direction, and the construction of such works executed under the direct supervision, of a registered architect or engineer, and all surveys, maps, or assays required in connection with public land surveying or assaying shall be made by or under the personal direction of a registered land surveyor or assayer.

Section 22. *Technical registration fund.* The secretary shall transmit to the state treasurer all fees or other revenues received by the board. The treasurer shall place ten per cent thereof in the general fund to assist in defraying the cost of maintenance of the state government and shall place the remainder in a separate fund to be known as "the technical registration fund," to be used only in defraying the expenses of the board and in the prosecution of violations of this act. Any other provision of law, notwithstanding, the unexpended balance remaining in said technical registration fund as of the end of the fiscal year shall not revert to the general fund, but shall be credited to said fund for the succeeding fiscal year. The board shall never incur any expense nor approve any claim against said fund in excess of the balance therein, nor shall the state auditor issue any warrant against said fund in excess of said balance.

Section 23. *Violation; penalty.* Any person not registered as provided in this act who shall practice, offer to practice, or hold himself out as qualified to practice, as an architect, assayer, engineer, or land surveyor, or shall advertise or display any card, sign or other device which might indicate to the public that he is an architect, assayer, engineer, or land surveyor, or is qualified to practice as such, or shall assume the title of engineer, or shall use or attempt to use as his own the certificate of registration of another, or use or attempt to use an expired or revoked certificate of registration, or shall present false evidence to the board for the purpose of obtaining a certificate of registration, or shall otherwise violate any provision of this act, shall be guilty of a misdemeanor.

Section 24. *Saving clause.* If any part of this act shall for any reason be adjudged by a court of competent jurisdiction to be invalid, the remainder thereof shall not thereby be invalidated, impaired, or affected.

Sec. 25. *Repeal.* Article 1, chapter 58, Revised Code of 1928, is hereby repealed.

APPROVED.

OKLAHOMA

Adopts Registration

At the recent session of the legislature the Joint Engineering Legislative Committee, headed by Wm. Furber Smith, of Oklahoma, succeeded in securing the passage of an act providing for the registration of professional engineers.

Oklahoma is the fifth state to pass registration legislation this year and becomes the 32nd state to take steps to protect life, health and property in the planning and making of the nation, its states and communities.

Considers State Organization

The zeal and public mindedness of the committee which sponsored the registration law has prompted the said committee to remain in existence with a view to realizing the purposes of the law. It is hoped that Arizona may be added to the already impressive list of states now confederated in the National Society.

MASSACHUSETTS

Society Planned

Plans for the organization of a professional society in Massachusetts are in the making according to Secretary Conlon of the National Society of Professional Engineers.

At present Massachusetts membership in the National Society is at large only. The Society hopes to sponsor legislation that will make Massachusetts a member of the new deal in engineering. Protection and advancement of the public welfare as well as the professional status of the engineer are justifications for such an endeavor.

Interested persons are invited to address President D. B. Steinman, at 117 Liberty Street, New York, N. Y., or Secretary Willard S. Conlon of the National Society of Professional Engineers at the National Press Building, Washington, D. C.

CANADA

Has Same Problem as U. S.

The existence of professional and technical societies of engineers in this country finds its counterpart in Canada.

President F. P. Shearwood of the Institute, would correspond to the founder society organization in the United States as follows:

"Whatever opinion any of us hold as to the real usefulness of the Provincial Corporations, we have to accept the fact that they are here, that they have legal powers and that it is the function and obligation of us, as engineers, to make these organizations of service to the public which will make use of their powers and in turn respect their authority. Mr. Pitts complains that no definite or tangible scheme has been disclosed for bringing about the amalgamation of the Engineering Institute of Canada, and the Corporations. This statement is corect but it is hardly a matter for complaint. It is undoubtedly the case but advisedly so; for, before rushing into a new name, fresh constitution and by-laws, etc., it has been thought well to understand and agree as closely as possible on what foundation this cooperation is to be built. That is, we must ask ourselves if the reasons for belonging to the Institute and to the Provincial Corporations are identical. We must know the objectives of each organization and what should regulate and determine the qualification for each of them. It is essential and imperative for us to agree upon the answers to these questions, and use this agreement as the basis for further detailed planning for amalgamation."

With a view to coordinating endeavors

the Institute has offered a prize of one hundred dollars ($100) for the best paper upon the subject. The announcement of the Past-Presidents' Prize for 1934-1935 is:

The Engineering Institute of Canada

THE PAST PRESIDENTS' PRIZE

1934-1935

Members of all grades are reminded that papers in competition for this Prize (which has a value of one hundred dollars) must be in the hands of the General Secretary on or before June 30th next. The subject selected is The Co-ordination of the Activities of the Various Engineering Organizations in Canada.

Papers intended for this competition should contain preferably not more than 10,000 words; they should be typewritten (double spacing) on letter-size sheets (one side only).

The rules governing the award of the Prize are as follows:

Rules Governing the Award of the Past-Presidents' Prize.

In recognition of the fund established in 1923 by the then living past-presidents and contributed to by subsequent past-presidents, a prize, to be called "The Past Presidents' Prize," may be awarded annually according to the following rules:

1. The prize shall be awarded for the best contribution submitted to the council of The Institute by a member of The Institute of any grade on a subject to be selected and announced by the council at the beginning of the prize year, which shall be July 1st to June 30th.

2. In deciding on the subject to be specified, the council shall confer with the branches, and use its discretion, with the object of selecting a subject which may appear desirable in order to facilitate the acquirement and the interchange of professional knowledge among the members of The Institute.

3. The papers entered for the competition shall be judged by a committee of five, to be called the Past-Presidents' Prize Committee, which shall be appointed by the council as soon after the annual meeting of The Institute as practicable. Members and honorary members only shall be eligible to act on this committee.

It shall be within the discretion of the committee to refuse an award if they consider no paper of sufficient merit.

4. The prize shall consist of a cash donation of the amount of one hundred dollars, or the winner may select books or instruments of no more than that value when suitably bound and printed, or engraved, as the case may be.

5. All papers eligible for the competition must be the bonafide work of the contributors and must not have been made public before submission to The Institute.

6. All papers to be entered for the competition must be received during the prize year by the general secretary of The Institute, either direct from the author or through a local branch.

7. The award shall be announced in The Engineering Journal and at the annual meeting, and, if possible, the presentation shall take place at that meeting.

R. J. Durley, Secretary.

April 10th, 1935.

NEW JERSEY

To Restrict Term Engineer

A campaign to prevent violations of law and misappropriation of the title "engineer" is taking form. The success obtained by the New York State Society and the methods employed by that organization are being studied.

It is believed that the campaign in New Jersey will not meet with the indifference of engineers and officials as it did in the sister state.

Membership Increase

The paid-up members in the National Society of Professional Engineers has been considerably augmented by the forwarding of a check from the Association to Secretary-Treasurer Conlon of the National Society.

Victor Gelineau

Victor Gelineau of 1 Exchange Place, Jersey City, Chief Engineer of the Board of Commerce and Navigation, has accepted the post of Chairman of the Committee on Professional Relations for the National Society.

Hudson County

From Secretary Leuthy comes word that funds for carrying on an active campaign for the accomplishment of the aims of the National and State organizations are being sought by the local engineering body.

Mr. Leuthy writes:

"The Professional Engineers' Club of Hudson County, the Hudson County Chapter of the New Jersey Association of Professional Engineers and Land Surveyors, Inc., reports on the club's outstanding social success of the year, a card party and dance given on the evening of May 6th, in the Carteret Club of Jersey City.

"The party was arranged to enrich the club treasury to publicize and properly carry on the share of the important work of the National and State organizations.

"Special features of the party were songs by Colonel Hugh A. Kelly, Past President of the State Association and Secretary of the State Board of Professional Engineers and Land Surveyors, a short address by Commissioner Arthur A. Potterton, of Jersey City, and songs by the Potterton Choristers, famed radio singers of the Jersey City public schools. After the entertainment refreshments and dancing were enjoyed.

"In view of the success of this first social attempt, the club will hold a similar affair in the Fall.

"C. George Krueger was in charge of the arrangements committee, consisting of Mr. James F. Kelly and Jay A. Jacobs."

The following resolution, intended to bring about uniform procedure in matters of dues, was adopted by the Chapter:

Resolution

Adopted by the Professional Engineers Club of Hudson County, the Hudson County Chapter of the New Jersey Association of Professional Engineers and Land Surveyors, Inc., at a regular meeting held on Monday evening, April 22nd, 1935, in Jersey City.

Whereas, the Professional Engineers' Club of Hudson County, by virtue of the affiliation of its parent body, the New Jersey Association of Professional Engineers and Land Surveyors, Inc., with the National Society of Professional Engineers, has been designated as the County unit of the National Society, and

Whereas, at a conference of organizations of Professional Engineers, held in New York City, on May 25th, 1934, for the purpose of organizing a National Society of Professional Engineers it was voted affirmatively and unanimously that membership in any one division, National Society, State Society and County Chapter, involves automatic membership in all three divisions, and that the national organization was to be patterned after our national unity of Sovereign States, and

Whereas, at the annual meeting of the New Jersey State Association held in Newark, on March 15, 1935, it was duly resolved to rescind Article 10 of the constitution of the Association and adopt in its place the following:

"Article 10, Dues: Each candidate upon his application for membership in any of the Chapters constituting this Association shall pay in addition to the dues fixed by the Chapter, such dues as are from year to year fixed by the annual convention of the State Association. Chapters shall issue dues cards indicating the holder to be a member of the respective Chapter as well as the State Association."

"In localities where Chapters do not exist or function members shall be assigned to the 'Headquarters Chapter' upon payment of the State Association dues. No members shall be so assigned where an active Chapter exists," and

Whereas, at a meeting of the executive officers and Board of Trustees of the New Jersey State Association, held in Trenton, N. J., on January 24, 1935, it was officially stated: "Commencing on January 1, 1935, each member State Society is assessed four dollars ($4.00) per professional engineer member to support the activites of the National Society, and its publication of the monthly magazine, 'The American Engineer.' In accordance with the above your total dues for 1935 will be seven dollars ($7.00), plus your County Chapter dues. Each County Chapter determines the amount of its own dues. In accordance with established practice, all dues are collected by the County Chapter and the appropriate share transmitted to the State Society, which will then transmit the proper share to the National Society," and

Whereas, further quoting from the minutes of the above meeting: "A motion was made, seconded and carried that the State Secretary notify all Chapter Secretaries of National dues in accordance with the statement, and that bills be rendered and collections made through the Chapters," and

Whereas, quoting from an article published in the January issue of the American Engineer: "Under the new National Organization the Chapter will exercise great powers and will be charged with heavy responsibilities. The Chapter will be the collecting agency for all dues assessed for the support of the National, State Societies and County Chapter," and

Whereas, the New Jersey State Association disregarding the regulations set, and motions made at the above-mentioned meetings, mailed to the members of the licensed engineering profession statements covering dues for the year 1935, in the National and State Societies and County Chapter, and

Whereas, these statements omitted the amount of Chapter dues, the name and address of the Chapter Treasurer to whom all moneys were to be paid, and created an impression that Chapter membership was unnecessary to become a member of the National and State Society,

Be it Therefore Resolved: That the Club recommends, that corrected dues statements be mailed by each Chapter to their respective memberships in the amount of ten dollars ($10.00), four dol-

lars of which shall be for the National Society and its publication of 'The American Engineer,' three dollars for the State Association, and three dollars for the Chapter, unless the dues assessed by the Chapter are greater than that sum, and that the erroneous impression created be corrected by a statement on the bill to the effect that Chapter membership is essential to become a member in either of the other groups and further, that the name and address of the Chapter officer to whom moneys are to be paid will be clearly printed on the bill.

(Signed) Peter F. Daly, President
Raymond F. Leuthy, Secretary

Copies to be sent to the National Society of Professional Engineers, N. J. Association of Prof. Engrs., and L. S. All County Chapters.

National Society of Professional Engineers, N. J. Division, Hudson County Chapter

Dues for the year 1935. May 20, 1935.

National Society of Prof. Engineers, including "The American Engineer"	$4.00
N. J. Assoc. Prof. Engineers and L. S., Inc.	3.00
Professional Engineers' Club of Hudson County	3.00
Total	$10.00

(Partial payments may be made. Total within the year.)

Name ..... License No.....
Address .....
Classification .....

Send payments to: James A. Foley, Chapter Treasurer, 429 Fairmount Ave., Jersey City.

PENNSYLVANIA

Society Most Active

Reports from Pennsylvania indicate that the State Society is already a force for public and professional welfare. National, state and local problems are being attacked with energy and effect.

Federal Scale Opposed

On May 21st, the following telegram was dispatched to Washington:
"Willard S. Conlon,
1033 National Press Building,
Washington, D. C.

The Executive Board of the Pennsylvania Society of Professional Engineers, representing thirty-five hundred professional engineers in Pennsylvania, at an emergency meeting today placed themselves on record as vigorously opposed to rates of compensation for professional and technical men in executive order of President Roosevelt re relief workers. Place this protest to do most good and advise us of further steps to take to secure an adjustment of these unfair rates which, if permitted to stand, will have the inevitable effect of reducing the compensation for professional service in all industries and governmental institutions."

The above was followed by a recommendation telegraphed as of May 23rd:

"Executive Board Pennsylvania Society of Professional Engineers strongly urges the appointment of registered professional engineers on special Labor Advisory Board to adjust injustices in proposed wage scale."

To the above Secretary Conlon replied:

"Contacts to accomplish the above were made last week and again this morning. Letter containing details will follow within a few days."

Vicious Legislation Blocked

As a result of the active opposition of the State Society the Ominsky Measure, H. R. 1750, which sought to restrict the control of public safety or health, insofar as building structures are concerned, to architects, lies in committee where it is likely to remain.

The appeal sent to every registered engineer of the State resulted in an astonishing response. Replies poured into headquarters thanking the Society for its efforts and watchfulness.

A more detailed account is to be found in the report of the May meeting of the Philadelphia Chapter.

Society and Chapter Meet

A joint meeting of the State Society and its Philadelphia Chapter was held in the Penn A. C. on May 2nd.

The principal subject of discussion was the now famous H. R. Bill No. 1750.

This measure was introduced in the Pennsylvania House of Representatives on March 25, 1935, by Mr. Ominsky, at the request of the architects and referred to the Committee on Education on the 26th of the same month. The act, as written, professes to be simply an Architects' Bill amending the act of July 12, 1919, so that "It shall be unlawful for any governmental department, bureau or other authority in the Commonwealth of Pennsylvania created for the purpose of filing plans and specifications to issue any permits based upon them unless the said plans and specifications are signed by a person legally qualified to prepare plans and specifications for buildings under the laws of this commonwealth."

As part of the same bill is the following addition and "joker" which every professional engineer is asked to read carefully.

"This act shall not be construed to prevent persons other than architects from filing applications for building permits or obtaining such permits, nor shall it be construed to prevent such persons from designing buildings and supervising their construction *provided that the public safety or health is not involved* and provided further that their drawings are signed by the authors with their true appelation as engineer, or contractor or builder or carpenter, but without the use in any form of the title architect."

With the following objectives in mind as part of our state program, *i.e.*,

(1) To advance and protect the economic and professional interests of the engineer, individually and collectively, through united effort, legislation and public relations;

(2) To strengthen, unify, extend and enforce State Legislation protecting the public welfare, the practice of engineering and the designation "engineer";

(3) To protect the engineer against exploitation, unprofessional competition, unlawful encroachment and restriction of rights of practice;

(4) To conduct a planned campaign for the advancement of the engineering profession in public recognition, confidence and esteem;

it was felt that the passage of H. R. No. 1750 would be very detrimental to the welfare of the public and the profession.

The bill in its original form is both vicious and selfish insomuch as it makes the practice of engineering subservient to that of architecture since all buildings are planned and designed for public safety and health. Also, it would place the engineer in the same class as the carpenter. The digest of the intention of the act is to prohibit registered engineers from

1—Filing applications for building permits;
2—Obtaining permits for same;
3—Designing buildings;
4—Supervising construction.

The Legislative Committee, represented by R. C. Scott and A. C. Fisher, contacted the sponsors of the bill on April 24th, and tried to prevail upon them to accept the objections offered so that a satisfactory agreement could be reached. It was agreed that the matter would be given immediate attention. Forty-eight hours elapsed with no reply being received. Anticipating the tactics employed in other states, steps were taken to contact every registered engineer in Pennsylvania, warning him of the pending bill. Each was asked to write to his Senator and Representative at Harrisburg with a vigorous protest asking to have the bill defeated to insure the rights of the engineer.

In a day or so, replies came pouring into headquarters from those who had received the notices thanking and appreciating the Society's "Paul Revere" act, and enclosing copies of letters they had sent to their legislative members.

The efforts thus far have not been in vain. The deluge of letters that have been received in Harrisburg put a stumbling block in the hopes of the sponsors. The bill is still in committee and various attempts have been made by others to amend it so that it could be brought out for vote. However, the Society is watchful and prepared to fight to the finish, our position being to "kill the bill," which is against public welfare.

It is a great sense of satisfaction to note that engineers for the first time, both individually and collectively, formed a united front and showed a fighting spirit in perpetuating their existence.

It is the intention of the Society, at the next session of legislature to introduce a bill protecting the practice of the professional engineer and at the same time to encourage the friendly and harmonious feeling of the architect.

The guest speaker of the evening, Mr. M. I. Kast, Secretary of the Registration Board of Architects, was unable to appear as very urgent matters at Harrisburg had to have his attention. It is hoped that at some future date we will have the privilege of his presence.

Spirited discussions and informal talks keyed up the gathering to a unified interest and an enthusiastic key.

Among the many outstanding men who joined the Society at the last meeting was Mr. H. H. Quimby, one of the leading consulting engineers in the country. He was the former Chief Engineer of the Department of City Transit in Philadelphia.

The following is a list of the committees as appointed by the President, Mr. S. I. Sacks, who presided at the exciting meeting:

Administration, S. I. Sacks.
Ethics and Practice, F. E. Hahn.
Legislative, S. I. Sacks.
Public Relations, M. H. Blez.
Membership, R. C. Scott.
Publications, A. C. Fisher.
Meetings, R. Mellor.
Reception, C. W. Palmer.
Entertainment, G. D. Jocum.

TULANE UNIVERSITY LIBRARY NEW ORLEANS

NEW YORK

By Raphael J. Smyth

A Notable Appointment

Governor Lehman, on May 23rd, 1935, appointed Mr. Alexander Potter, a noted hydraulic engineer, as one of the members of the Rockland-Westchester Hudson River Crossing Authority, under which a vehicular tunnel shall be constructed under the river between Tarrytown and Nyack.

The State Society, having consistently advocated that the engineering profession be represented on all authorities, boards, commissions and similar governmental agencies which have jurisdiction over engineering projects, hails this appointment with approval and cordially expresses to the Governor its appreciation of this extension of opportunity to the profession to render greater public service in administrative fields.

Admirable Organization Cooperation

On May 15th, 1935, the Board of Direction of the Metropolitan Section, Am. Soc. C. E., responding to a request made by Dr. D. B. Steinman, Director of the Section and Trustee of the State Society, voted to contribute the sum of $250 toward defraying the expenses incurred for legal services in connection with the State Society legislative program, the most recent notable result of which has been the enactment of the Dunnigan Bill restricting the practice of engineering by corporations.

A Salary Upturn

The Board of Supervisors of Westchester County unanimously voted on May 6th, 1935, to restore one of two ten per cent pay cuts to county employees receiving less than $3,000 a year, such action to become effective on July 1st, 1935.

Actions like these certify the conviction that the nation marches again toward prosperity.

Relief Thefts Charged to "Engineers"

On May 9th, 1935, Hon. George U. Harvey, President of the Borough of Queens, testifying in the Aldermanic relief investigation, stated that "engineers" on emergency relief work had stolen and sold relief supplies.

Commenting on this testimony the office of the State Society on the following day issued a press release calling attention to the facts (a) that most of the so-called "engineers" in the relief organization are not engineers although they have been so designated by work relief authorities in violation of the law of the State and (b) that the Society has repeatedly protested against the indiscriminate assignment of the title "engineer," by relief authorities, to men who are not legally qualified to be so designated.

The release also carried the following statement by Dr. D. B. Steinman, President of the National Society of Professional Engineers: "This is but another instance of the injury resulting to the good name and reputation of a profession when the professional designation is arbitrarily applied to unqualified men who have not met the profession's standards of education, experience and character. In New York State, and in thirty-one other States having similar registration laws, it is unlawful for anyone to practice engineering or to use the title "Engineer" unless he is a licensed professional engineer. The State Board of Examiners investigates character and reputation as well as technical qualifications and the profession is justly proud of its high standards of ethics and professional conduct. Until a man is qualified and licensed by the State Board, he is not an engineer and does not belong to the profession. The profession should not be judged by the conduct of such men who have misappropriated its designation. If any licensed professional engineer has been guilty of unprofessional conduct, charges should be filed with the State Board of Examiners, who will take prompt steps toward revocation of license. In all the fifteen years of operation of the Engineers Registration Law in New York State, during which period some 15,000 men have been licensed, charges of unprofessional conduct have been proved in only two instances, resulting in dismissal from the profession. In order to guard its reputation which it seeks zealously to maintain, the profession has been appealing for public cooperation to stop the misapplication of the title "Engineer" to men who are not engineers.

In issuing the release the officers of the State Society expressed their very friendly regard for Borough President Harvey stating that they realized that his reference was made to alleged practices of designees of the relief organization and was not intended as an aspersion upon the profession.

State Society Annual Meeting

Over 400 delegates and guests attended the annual meeting of the State Society at the Hotel Roosevelt, New York, on May 18th, 1935; Mr. Arnold G. Chapman, President.

Resolutions were adopted recommending: the transformation of the Department of the Interior into the Department of Public Works with an engineer at its head; the allocation of $50,000,000 to States and their political subdivisions for the preparation of plans for public works projects under the $4,800,000,000 Federal program and the employment of competent engineers and architects on such work at salaries and fees commensurate with their services; the abandonment of the present unsatisfactory work relief methods and the substitution of contractual procedure under properly investigated, bonded and supervised contractors; a nation-wide study of changes needed in highway construction to reduce the number of automobile accidents in which more than 30,000 persons are killed annually in the United States.

A luncheon was held between the morning and afternoon business sessions at which Mr. Linford S. Stiles, past president of the Kings County Chapter, introduced Mr. A. V. Sheridan, past president of the State Society, as toastmaster. The speakers were: Hon. James J. Lyons, President of the Borough of the Bronx; Hon. George U. Harvey, President of the Borough of Queens; Hon. Elmer F. Andrews, State Industrial Commissioner; Mr. Arthur A. Johnson, past president of the General Contractors' Association of New York; Dr. D. B. Steinman, President of the National Society of Professional Engineers; Mr. Arnold G. Chapman, President of the State Society. Mr. F. E. Schmitt, editor of the Engineering News Record and Mr. George T. Seabury, Secretary of the American Society of Civil Engineers, guests of the Society, were introduced to the gathering.

The following officers were elected: president, Prof. John Charles Riedel, Kings County; first vice-president, Hon. Alfred E. Roche, Troy; second vice-president, Mr. Fred H. Zurmuhlen, Richmond County; financial secretary, Mr. Ernest F. Fox, Bronx County; treasurer, Mr. Patrick M. Corry, Bronx County; directors for three years, Mr. John Avery, Westchester; Mr. Charles W. Burke, Kings; Mr. Joseph F. Lamb, Bronx; Mr. Elmer C. Lawton, Albany; Mr. John L. Scanlon, Erie; Mr. Ole Singstad, New York; Mr. Edward E. Stickney, Broome; Mr. Walter H. Weiskopf, New York; director for two years, Mr. Linford S. Stiles, Kings; director for one year, Mr. James A. Pietsch, Richmond.

An exhibition of drawings and models covering nearly every phase of recent, current and proposed city-wide public improvements attracted much attention and elicited highly favorable comment.

CHAPTER NEWS

Richmond County

Nearly 200 engineers and their friends attended the sixth anniversary dinner-dance of the Richmond County Chapter at the Meurot Club, St. George, Staten Island, on May 9th, 1935.

The occasion was unusual in that speeches were "taboo." Under the handicap of this rule State Senator Rae L. Egbert and Assemblymen Harry Robillard and Herman Methfessel gracefully—but perhaps somewhat ruefully—bowed acknowledgements of their introduction to the assemblage by Mr. Frederick H. Zurmuhlen, President of the Chapter.

Among the guests were Mr. Art Hedquist, secretary of the Staten Island Chamber of Commerce, Mr. Herman W. Ordeman, Consulting Engineer of the office of the President of the Borough of Richmond, and Mr. William Merrifield, a prominent political figure in the borough.

All, merrily and enthusiastically, joined in dancing and community singing to the music of Broadway Jones and his orchestra.

The activity was a notable success—socially and financially—for which due credit is given to the following members of the Committee on Arangements: Messrs. William J. Massa, Chairman, Victor H. Reichelt, John Rader, Charles Strohmeyer and E. P. Neuschwander.

Courtesy: E. P. Neuschwander, Member of the Publicity Committee.

Steuben Area

On May 7th, 1935, the Steuben Area Chapter held its monthly dinner-meeting at the Baron Steuben Hotel, Corning. Mr. Michael W. Wipfler, President of the Chapter, presided at the meeting, the arrangements for which had been made by Messrs. Albert M. Tietzel and Clarence H. Dibble.

A very interesting address was delivered by Mr. M. S. Parkhill, Mechanical Engineer of the Ingersoll, Rand Co., on the subject of "Air Compressors and Their Use."

Two days after the meeting, on May 9th, 1935, Mr. Wipfler, who is the City Engineer of Elmira, slipped and tumbled over a stair railing in the City Hall, falling thirty feet to a tile floor below; taken to St. Joseph's Hospital it was found that he had a broken leg and fractures of the skull, pelvis, knee and jaw bones and that his condition was extremely critical. His life hung in the balance for days but his splendid courage and constitution carried him successfully through the valley of doubt and he is now ascending the slope toward the heights of health.

Mr. Wipfler has been employed for more than 30 years in the engineering forces of the City of Elmira where he

is well known and held in high and affectionate esteem. Developing an early interest in the State Society he has enthusiastically sponsored and supported its ideals, organized its potential resources and advanced its aims. The best and kindest good wishes of all the members of this society are extended to him for a speedy recovery of health and strength in fullest measure.

NIAGARA COUNTY

A meeting of the Niagara County Chapter was held at Niagara Falls, on May 13th, 1935.

The interesting announcement was made that Mr. Alfred L. Williams, President of the Chapter, had just been designated a special investigator of violations of the engineers' law, for Niagara Falls and its vicinity, by Mr. Charles B. Heisler, Director, Professional Licensure Division, State Education Department.

Courtesy: Mr. J. W. Naylor, Secretary.

WESTCHESTER COUNTY

A regular meeting of the Westchester County Chapter was held in the Supervisor's Chamber, Court House, White Plains, on May 1st, 1935.

Mr. Malcolm J. Hartmann was elected a director to serve for the unexpired portion of the term of office of the late William A. Smith.

The matters of the establishment of an employment service bureau and a study of rates of compensation for engineering services were approved.

Mr. John W. Pickworth of the consulting engineering firm of Weiskopf & Pickworth, New York City, and a member of the New York County Chapter, presented a highly instructive paper on "The First Application in This Country of the Concrete Shell Dome Principle and the Design of Earthquake-proof Structures."

The Board of Supervisors of Westchester County, on May 6th, 1935, appointed Mr. Charles H. Sells, President of the Chapter, to the office of County Engineer, the appointment becoming effective immediately. The Chapter felt highly gratified at this appointment as it had formally recommended such action.

Courtesy: Mr. Francis J. Laverty, Secretary.

BRONX COUNTY

A large number of engineers and their friends attended the monthly meeting of the Bronx County Chapter which was held at the Concourse Plaza Hotel on June 6th, 1935.

Mr. James O. Hoyle, investigator for Professions of the University of the State of New York, explained most instructively the technique of the "Enforcement of the Engineers' Licensing Law."

A well-planned questionnaire has been mailed, by the Committee on Professional Census, to every licensed engineer and land surveyor in Bronx County. The compilation of the returns will constitute a record of the engineering resources of the county which will prove to be a source of benefit to the public, the profession, and to individual engineers.

Courtesy: Mr. Raymond C. Sullivan, Secretary.

A great number of citizens of The Bronx have noted with sorrow the press reports of the death of Josiah Huntington Fitch, former Chief Engineer in the office of the President of the Borough of The Bronx, which occurred in Tampa, Florida, on May 7th, 1935.

Mr. Fitch entered the engineering service of the Park Department on August 1st, 1894, in the annexed part of the old City of New York known as the Twenty-third and Twenty-fourth Wards; his services continued with the Department of Street Improvements, which succeeded the Park Department, and, after January 1st, 1902, when the revised Charter of Greater New York went into effect, with the office of the President of the Borough of The Bronx. He became Chief Engineer on April 1st, 1918, from which office he retired on July 1st, 1927.

After his retirement he established his residence at Fort Myers, Florida, where he was appointed City Manager under the commission form of government; he was elected Mayor of that city in 1930.

KINGS COUNTY

Mr. Arthur A. Johnson, past president of the General Contractors' Association of New York, a strong advocate of the spending of relief funds for projects of lasting value to the community under expert contractual supervision has prepared, and submitted for consideration, the following suggested form of contract designed to secure the services of ethical responsible, contractors in the prosecution of such works:

1. No contractor should be permitted to enter into any contract unless he has been in active business as a contractor in the City of New York, performing construction projects, for at least five years prior to the date of receiving bids.

2. The City should create a bureau or a committee to grade contractors according to the volume of work they have performed during the last five years to determine the size of each project that can be undertaken by the contractor.

3. Contractors should be asked to make a proposal for each project for which they are qualified on the basis that their total compensation shall be a lump sum fee and the contract shall be awarded to the contractor bidding the lowest fee.

4. The lump sum fee payable to the contractor shall be full compensation for providing skilled supervision of the work, for all clerical work on the contract, making up payrolls, bookkeeping, etc., for all head office expense and for the supervision of the purchasing of all materials.

5. All labor employed on the job, both skilled and unskilled, shall be employed by the contractor at rates fixed by the City, from classified unemployment rolls, and the contractor shall have full authority to hire and discharge all employees.

6. The contractor's office force shall make up all payrolls which shall be delivered to the City and payment made direct to the men by the City.

7. The City shall determine in advance a complete schedule of all plant and equipment rentals; the contractor shall provide all plant and equipment and be reimbursed only at the rates and under the conditions of the schedule.

8. The contractor shall be responsible for coordinating the delivery of all necessary materials so that labor shall be efficiently employed. He shall obtain bids from not less than three sub-contractors, or material men, which bids shall be submitted to the City, and the contract when approved by the City, awarded by the contractor to the lowest bidder. The bills for the material shall be rendered direct to the City and after they have been submitted and checked by the contractor, shall be paid directly by the City.

9. All small tools, pipe-fittings, hose, etc., etc., other than plant and equipment, shall be furnished by the contractor, either from his own stores or by purchase. At the time of the furnishing of the small tools, etc., etc., the contractor shall render a bill to the City for checking as to quantities and prices, but these bills shall not be paid to the contractor until the completion of the project. Upon the completion of the project, all small tools, etc., etc., shall be assembled in one place and their then value appraised by an official of the City and a representative of the contractor and the difference between this appraisal and the original approved invoices shall be paid to the contractor as full compensation for the furnishing of all small tools, etc., which shall thereafter become the property of the contractor.

Courtesy: Mr. Linford S. Stiles, past president of the Chapter.

QUEENS COUNTY

The Queens County Chapter Committee on Law and Ethics at the direction of the Chapter addressed a communication, under date of April 17th, 1935, to the Emergency Relief Bureau of New York City, calling attention to a number of work relief employees with engineering titles whose names did not appear in the latest directory of licenses published by the State Department of Education. It also requested that changes be made in the personnnel or assignment as might be necessary for compliance with the requirements of the State Education Law.

In the reply of the Works Division of the E. R. B. to this letter the following statements appear:

"For some time, no one has been appointed to an engineering position with this Bureau above the grade of 'Engineer,' unless licensed. The men above that grade but unlicensed, have been requested to secure licenses."

"Men holding the title of 'Engineer' and 'Assistant Engineer' we feel should be exempt from the license requirements as they are not in responsible charge of work as principals."

"As you know, most of the employees of this Bureau are in economic need and we have not pushed the license question too hard pending some possible means being provided for obtaining a loan of the $25 necessary to cover each license application."

The Queens County Chapter at its meeting on May 23rd, 1935, decided that the position occupied by the E. R. B. created a condition of such serious import to the entire profession as to warrant the consideration of its adjustment by the Society rather than by one of its Chapters. The facts of the case have therefore been transmitted to the Society and its action in the premises is awaited with keen interest by members of the profession generally.

Courtesy: Mr. Frank Lilien, Chairman, Committee on Law and Ethics.

RENSSELAER COUNTY

On May 21st, 1935, the Rensselaer County Chapter held its monthly dinner-meeting at the Troy Club, in the city of Troy, at which Mr. Grant K. Palsgrove presided.

Among the guest speakers of the evening were Mr. Victor Starzenki, Chief of the Heating Division of the Niagara-Hudson Corporation, and Mr. J. T. Bulman, engineer with the Lone Star Cement Company. Mr. Starzenski discussed the relative efficiencies of coal, coke, gas, oil and electricity as heating agents. Mr. Bulman described, with the assistance of sound motion pictures, many advantageous uses of high-early-strength cement in construction and repair work.

Mr. Alfred E. Roche, Commissioner of Public Works of the City of Troy, conveyed to Mr. Starzenski the thanks of the Chapter and Mr. Palsgrove likewise made acknowledgments of appreciation to Mr. Bulman.

The architectural profession was represented by Prof. Ralph E. Winslow and Mr. Stanton P. Lee, Sr., who assured the Chapter of the active cooperation of the architects in all efforts to prevent illegal practice in both the engineering and architectural professions.

Mr. Arnold G. Chapman, past president of the New York State Society, reviewed the history of the society during the past ten years recounting its remarkable progress and accomplishments in advancing the status of the engineering profession.

Commissioner Roche reported upon the annual meeting of the state society which was recently held in New York City.

Courtesy: Normand S. Holroyd, Secretary.

LICENSES GRANTED
IN STATE OF NEW YORK

Those marked (*) were granted Land Surveyors' licenses.

Almquist, Milton L., 94 Oakview Ave., Maplewood, N. J.

Barton, Roy S., 6 Westerly Way, Binghamton, N. Y.

Buck, George H., 55 Cherry St., Elizabeth, N. J.

Cherdantzeff, Peter, 49 St. Nicholas Terr., New York City.

*Chumard, Geary W., 43 East Ave., Middletown, N. Y.

*Church, William B., 17 Livingston St., Binghamton, N. Y.

Claeys, Harry C., 1142 Pacific St., Brooklyn, N. Y.

Clark, Frederic C., 246 Stuart St., Boston, Mass.

*Colburn, Harold E., Almond, Allegheny County, N. Y. (Steuben Area).

Corra, Julius C., 31-35 Crescent St., Long Island City, N. Y.

Daley, William B., 98 Woodlawn Ave., Albany, N. Y.

Dovjikov, Alexander, 140 Claremont Ave., New York City.

Fox, William J., 1 Columbia Pl., Albany, N. Y.

Fraser, Robert M., General Cable Corp., 8 Church St., White Plains, N. Y.

*Fuller, Henry D., 444 Van Duzee St., Watertown, N. Y.

Fox, Ernest R., 45 Norwood Ave., Albany, N. Y.

Gorman, Laurence J., 92 Vanden St., New York City.

Kelley, Leo A., 5527 Eightieth St., Jackson Heights, L. I.

Kennedy, John T., Ford, Bacon & Davis, 39 Broadway, New York City.

Keyes, Donald B., University of Illinois, Urbana, Ill.

*Klingenberger, Walter R., 66 Aldine St., Rochester, N. Y.

Larsen, Horold T., 13 Hanford Pl., Tarrytown, N. Y.

Leland, Harry R., 2433 North Fourth St., Harrisburg, Pa.

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Maus, Frank J., 423 E. Thirty-eighth St., Paterson, N. J.

*Meyer, Cornelius R., 1601 Carrie St., Schenectady, N. Y.

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Seifert, William P., 77 Highview Ave., Tuckahoe, N. Y.

Shupe, Elmer B., 350 Marchland Ct., Troy, N. Y.

Sidman, Alfred G., 147 N. Mountain Ave., Montclair, N. J.

Skinner, Harvey J., 246 Stuart St., Boston, Mass.

Soper, Ellis C., 17 E. Forty-fifth St., New York City.

*Topping, Charles H., 106 West Fifty-fifth St., New York City.

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*Ward, Charles E., 14 Maple Drive, Great Neck, N. Y.

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Murphy, Robert V., 133 Claremont Ave., Jersey City, N. J.

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Olive, Theodore R., 29 Harding Rd., Glen Rock, N. J.

Olsen, Carl J., 23 Market St., Perth Amboy, N. J.

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McBride, Charles B., Falconer, N. Y.

McBride, John, 37 Pinewoods Ave., Troy, N. Y.

McGuire, John P., 43 Spruce St., Schenectady, N. Y.

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Wolfson, James J., 755 Seventh Ave., New York City.

OHIO

(*Continued from page* 13)

Everything desired by the engineers was incorporated in the bill and was treated on a parity with legal departments. This bill was defeated in the House, the engineers taking no active part for its passage more than to see that the interest of the engineers were properly cared for in the act itself.

The most outstanding results of our activity in matters pertaining to legislation is evidenced by the fact that every legislator, from the Governor down, is duly conscious that the engineers of Ohio are, for the first time in their existence, competently and thoroughly organized.

The writer has had the privilege and the pleasure of visiting every local society, usually at their initial meeting, and the membership in the local societies vary from forty-three to a potential maximum of 735. We are now laying plans for a campaign for membership in the National Society of Professional Engineers.

I am submitting the above information with the hope that it might suggest itself to you as a means of approach to the various registered engineers and surveyors within your State. At a little later date, I am going to submit to you as a matter of record for you, the names of all the officers and committees in the various local societies.

It is inspiring to know, as I meet with them, what they contemplate doing Intersociety bowling matches, golf games, etc., are contemplated. They are also looking forward to the October meeting of the National Council of State Boards of Engineering Examiners which will be held in Columbus on October 23, 24, 25.

Elaborate arrangements will be made by the Ohio Society for the proper entertainment of all visiting engineers. I am particularly interested in having all of the membership committee chairmen be present at that meeting if at all possible.

Be assured of my full cooperation and assistance in any matters of interest to you in the matter of promoting new membership or new societies to be coordinated with State and National Society.

With all good wishes, I am

Cordially and sincerely yours,

Perry T. Ford,
Chairman."

Acknowledgements

A letter to each member of the Ohio Society and signed by President Wade W. Shidler and Secretary John Laylin, contains in addition to a recital of activities, the following gracious acknowledgment:

"We want to extend our sincere appreciation to Governor Martin L. Davey, Hon. Edward N. Waldvogel, Hon. Paul P. Yoder, Hon. Willard D. Campbell, Hon. Chas. P. Taft, Hon. J. Freer Bittinger, Hon. Richard Marlow, Hon. George H. Kilpatrick, Director of Highways, John Jaster, Jr., and our own Chairman of the Legislative Committee of Ohio Society of Professional Engineers, for their splendid consideration and cooperation at all times.

Very truly yours,
Ohio Society of Professional Engineers."

Support for Works Secretariat

More than 500 Ohio engineers received the appended appeal. The results have been in excess of hopes. Thanks are due to President Shidler and Secretary Laylin for the initiative and effective action of the Society.

"The following letter has been issued by the National Society of Professional Engineers and addressed personally to all members of the Congress. You are urged to write to your Senators and Representatives at once asking their favorable consideration.

"The National Society of Professional Engineers have carefully reviewed S. 2665 introduced in the Senate by Senator Lewis, and H. R. 7714 introduced in the House by Congressman Cochran, providing that the 'Department of the Interior' shall hereafter be called the 'Department of Conservation and Works,' and that the Secretary of the Interior shall here-

after be known as the Secretary of Conservation and Works.

"The engineers are heartily in favor of this progressive legislation and recommend its immediate enactment. We have one suggestion to offer, however, and that is that the word Public precede the word Works, thus the Department would be known as the 'Department of Conservation and Public Works,' and the officer as the 'Secretary of Conservation and Public Works.'"

"Thanking you and urging your hearty cooperation, we are

"Very truly yours,
Ohio Society of Professional Engineers."

Relief Rates Protested

The Ohio Society has forwarded the following appeals in connection with the schedule of rates proposed in connection with the work relief program:

"Hon. Franklin D. Roosevelt,
President of the United States,
The White House,
Washington, D. C.
My dear President:

The Ohio Society of Professional Engineers joins with the National Society of Professional Engineers in opposing rates of compensation for professional and technical men in the President's works relief program, and earnestly recommends adjustment of these unfair rates.

Thanking you, and with our best wishes for your continued success, we are

Very truly yours,
Ohio Society of Professional Engineers."

"My dear Congressman:

The Ohio Society of Professional Engineers vigorously opposes rates of compensation for professional and technical men in the set-up of the President's works relief program, and earnestly recommend adjustment of these unfair rates.

Your consideration and cooperation in this matter will be appreciated.

Thanking you, and with our own personal well wishes for your continued success, we are,

Very truly yours,
Ohio Society of Professional Engineers."

Note: This is evidence of an alert, effective Society.

CONNECTICUT

Registration Approved by Legislature

The Engineers Registration Law passed both houses of the State Legislature during the week of May 26, 1935. The measure, which has been before the Legislature for several months, has received the signature of the Governor and thereby becomes law.

The lateness of this information prevents publishing any detailed account thereof. A copy of the Act will appear in the July issue.

ITEMS OF GENERAL INTEREST

(*Continued*)

RECOGNITION OF REGISTRATION

The National Society has petitioned the F. E. R. A. to recognize the fact that thirty-two states regulate the practice of professional engineering and that improper use of the title "engineer" is in violation with statutes.

Secretary Conlon has conferred with the Administrator and would welcome support from the several State Societies who are requested to write the F. E. R. A. on this subject.

WORKS DEPARTMENT MEASURE

National Society Presses Same

The Senate and House bills creating a Department of Conservation and Works have received the endorsement of Secretary Harold L. Ickes of the Department of the Interior.

At the instance of the National Society the addition of the word "Public" in front of Works is being considered. Assurances have been received by the Society from Senators and Congressmen throughout the country that the amendment will be pushed. The response to the appeals made in the various States has been most gratifying and indicates clearly the value of a politically and socially minded engineering organization.

PRESS COMMENTS

(*Continued from page* 12)

Roosevelt job relief program. The National Society of Professional Engineers recommends that all public works be done by contract instead of hiring members of the profession directly at what it calls degrading wages."

"Urges Immediate Development of U. S. Mineral Resources.

"Urging immediate development of American mineral resources, and passage of the Pope-Dimond and Scrugham bills calling for such mining development with the aid of unemployed miners and mining engineers, D. B. Steinman, President of the National Society of Professional Engineers, today asked Secretary of the Interior Harold L. Ickes to throw his influence behind the development of American mineral resources.

"In a special statement issued here, the New York engineer, one-time consulting engineer on the George Washington Bridge, pointed out that many mining engineers are desperately in need of employment, and that inasmuch as 'the United States is the world's greatest potential mineral center, and the largest user of tin and other metals, the mining deposits of the United States should be developed, thus giving employment to miners and mining engineers.'

"Willard S. Conlon, secretary and administrative assistant to Mr. Steinman, consulted with Interior Department official today."

SOCIETY APPEALS RATES

(*Continued from page* 12)

demning work relief and petitioning for contract practices. The engineers are whole-heartedly in support of this proposition and consider this the best method of attack.

STATUS OF THE ENGINEER

(*Continued from page* 6)

And so, in introducing this series of discussions this afternoon, the speaker wishes to make a plea that at the next or ensuing meeting of The Engineering Institute an attempt be made to arrange the agenda so that the public, and particularly those in authority, will welcome the coming of our annual meeting, and will look forward to some constructive guidance on the part of this great group of engineers.

Of course, it is necessary to untangle the status of the engineer in Canada, and the papers that you are going to hear are necessary, and will be very interesting, but if the average professional engineer in this country would get away from the detail of his profession sufficiently long to show the man in the street that he has real stature, then he would not have to spend time worrying about his status.

It is no doubt a pleasure to submerge oneself completely in a technical problem, to wallow in a mass of detail, and after weeks and months of concentration to emerge triumphantly with the solution—a solution which can be proved backwards and forwards, and all carefully drawn to the scale of one-half inch to the foot. When you solve a problem of that kind, it really does not matter if you have not been out of the house for a week, or read a daily newspaper for two weeks. You have solved this thing and you know it is right.

Meanwhile, England may have gone off the gold standard; Germany may have turned communistic, or Fascist, or Nazi. One doesn't really care. Possibly the future of some huge industry may be trembling on the brink; it may be the corporation for whom one is working out this problem, but what does it matter. And, frankly, one did not have to care very much in the past. There were always more and more problems to be attacked, lots of work to do, intensely interesting work, and the wheels were going around merrily.

But things are different in 1935; in fact they have been different for the last four years. The wheels of industry have largely stopped running, and the supply of problems has lessened. There are thousands of engineers in this country who have been out of employment for years, and are still out, although the wheels of industry are beginning to move again.

When this depression started there was considerable noise about "technocracy"—that is up in the attic now with other fads of the past, Mah Jong, crinolines and silent pictures. But there was a warning in technocracy which the average engineer failed to grasp. The theory the technocrat handed to us was that too much energy had been devoted to production and there had not been enough guidance and efficiency in distribution; criticism should not have been aimed at production, but at the more inefficient part of the industrial structure, lack of guidance.

Who has been responsible? Just a group of engineers, ourselves, who sit down and discuss at annual meetings the details of bascule bridges, when they should be out performing some good service for the public, and giving the public the benefit of their training and their brains.

Every engineer should be awakened to the fact that in this mechanical age of progress, if he is ever to acquire real stature in this country, he will have to get out in front of the business mess in which all find themselves to-day, a mess for which he is in a great measure responsible. Away out in front, applying the same logical principles to the present problems as in the past have been applied to production problems. The engineer may have to learn a new language. He may have to discover his lay-associates, to find out who these strange creatures are, before he can be much use, but having served his apprenticeship out in front, where he is performing a real service to the Dominion of Canada, then, and only then, can he look in the mirror, once in awhile, and

congratulate himself, not on the status of the engineer in his profession, but on the stature of the engineer in the economic life of Canada.

FEDERAL RELIEF PROGRAM

(*Continued from page* 7)

Bear in mind this is a completely Federal machinery—not a state government organization. In some cases, therefore, Director Hopkins is appointing the present State Relief Director as the Works Progress Director. In the appointments already made, however, new people have largely been designated.

Cities and villages will present their work relief projects to the local Works Progress Administration office. They will then go to the state director where it appears final action can be taken without sending everything to Washington. Forms will be available shortly on which applications can be submitted locally after the Works Progress Administration Offices have been established.

3. Highways and Grade-Crossing Projects. The State Highway Departments will be the key units working under general rules and regulations of the Bureau of Public Roads, will act pretty much on the recommendations as submitted by the state highway department—that is, within the general policies established by Washington. Cities and villages should at once, if they have not already done so, contact the state highway departments on street and grade-crossing elimination work.

Because the intent of all the Federal program is to put the relief employables at work, much of this work will have to be carried out in cities and larger villages.

4. Housing Projects. This will be handled by the Housing Division of PWA at Washington, and any city or village interested should contact, by correspondence, this unit at the Department of Interior Building, Washington. The cities which will share in the allotment made are pretty definitely known since the projects represent plans which have been before PWA for some time.

The above represents, briefly, the organizational set-up and the procedure. The Division of Applications and Information at Washington is simply a transmitting agency—transmitting matters to the Advisory Allotment Committee.

D. Wages:

These have appeared in the public press and are on the whole very unsatisfactory, especially where specialized services are required. It is believed that exceptions will have to be made by Director Hopkins. One of the exceptions to the general wage schedule refers to loan-grant propositions where the community borrows part of the funds.

C. Future Development:

Realizing that 90 per cent of the program will be that pertaining to work relief projects, which will be handled under the Works Progress Administration on a pretty nearly 100 per cent grant basis and Federally supervised, it is reasonable to believe that:

1. The Works Progress Administration organization ought to be completed before July 1st.

2. On or about July 1st, all employables now on FERA work relief, will automatically be transferred to the new system. Information indicates that these employables will continue to work on 75 per cent of the present FERA projects. Bad ones will be weeded out but in the main much of the new program will be based on the present projects.

This development will put over 2,000,000 relief workers on the new basis. Then during July, the balance will gradually be added until the full complement of 3,500,000 is reached.

To carry the above out, it is predicted that the Works Progress Administration will be alloted a sufficient lump sum to place people to work on or about July 1.

CONSERVATION AND WORKS

(*Continued from page* 8)

poses. Independent agencies, moreover, have been formed, adding to the complexities of government.

Through bureaucratic aggrandizement and in the absence of a legislative policy most of the departments have acquired appendages that have no place under their initial powers, which has resulted in repeated proposals for governmental reorganization. It is axiomatic that the fundamental function of a department is weakened by the extent to which it engages in unrelated activities. Its general importance may be magnified in this way, but competent administration is dissipated by the lack of cohesion. Reorganization, however, is a gradual process that can only be effectuated by time and careful study. It is not the purpose of the present bill or of this report to propose any transfer of specific activities, but rather to present the need for more clearly identifying the Department of the Interior with its primary functions, leaving to the President and the Congress such unification of conservation and public works activities within the Department as may be practicable in the logical rearrangement of government business.

While the primary activity of the Department of the Interior continues to be conservation, and its corollary public works, nevertheless, the distribution among agencies of functions relating to our domestic economy threatens the effectiveness of a centralized conservation administration as a national policy through duplication and neglect. The dissipation of energy and funds in administering the numerous conservation activities of the Government can no more be justified than the dissipation of valuable natural resources; in fact, the one is, at least in part, the cause and the other the effect of improper organization. It is clear that conservation can only be established on a sound and permanent basis by adopting it as a national policy and concentrating the responsibility. Uniform principles would thus become established, economy of operation would mean greater accomplishment for the funds expended, and of more importance still, the danger of exploitation would be obviated because policy and precedent would create protective grooves that any temporary transgressor in public office would find it difficult to free himself from for the benefit of himself or others.

Knowledge of character and content of our natural resources is essential to their conservation and no one is competent to forecast the results of their discovery and adaptability except through scientific research. Until man first harnessed the waterfall, the stream did not represent power; and until he discovered that he could divert water from the river by gravity to irrigate his crude agriculture the stream was an undeveloped resource. It has not been infrequent that minerals of unsuspected value have become some of our most useful resources, as for example, carnotite from Western Colorado, which produces radium, and magnesite from Washington and California, which is a valuable refractory material used in the steel industry. The Geological Survey has been pioneering in the classification of our lands and their mineral content for many years. A chemist in an Interior laboratory found the clue to helium which seven years later was discovered by British chemists as an element in the atmosphere. Later two of the technical bureaus of the Department surveyed the helium resources in natural gas and perfected a method for its extraction. The discovery and utilization of an unsuspected resource is a creative process which adds to our national wealth. It is the proper function of the Federal Government to carry on the work of classification and discovery because it promotes the general welfare. The Government for many years has wisely reserved the mineral rights in disposing of public lands. In the light of past experience with the pioneering of science no one can estimate their value.

There are seven bureaus in the Department of the Interior of which six are engaged directly in conserving our natural resources. Three divisions also under the Secretary of the Interior are likewise engaged. The General Land Office administers all laws relating to the public domain; the Bureau of Indian Affairs manages and conserves the property of the American Indians, including timber, agriculture and mineral lands; the Geological Survey through its topographic surveys and geological explorations is one of the outstanding conservation units of the Government; the Bureau of Reclamation conserves water, the West's most necessary resource, and puts it to beneficial use; the National Park Service preserves the scenic beauties and unique characteristics of nature; the Bureau of Mines conserves fuels, ores, petroleum and natural gas through scientific and technological investigations; the Division of Investigations enforces existing laws for the protection of natural resources; the recently established Division of Grazing will protect injury to the public grazing lands by preventing overgrazing and soil deterioration; the Petroleum Administrative Board is concerned with the control of the oil industry to prevent waste of this valuable resource. (See Exhibit II.)

While there is a scattering of conservation activities in other Government establishments, no other single agency is concerned so completely with this important subject. Some of them, like the Department of Agriculture, have a special field touching on conservation in a limited way which should not conflict with a general conservation program. The primary purpose in establishing that department was to promote crop production which comprehended bringing more acreage into use and increasing the yield per acre. I mention the Department of Agriculture particularly because it illustrated without any critical implication the point that as an offspring of the Department of the Interior it was given an important problem of internal development that required fuller consideration than could be devoted to it by a department engaged in internal affairs generally.

For many years proposals have been presented to concentrate in the Department of the Interior certain public works

functions on the basis that already it either supplied basic data for public works projects or was engaged in their actual construction. The transfer and consolidation of the Public Buildings and Public Parks of the National Capital, the Arlington Memorial Bridge Commission, the Public Buildings Commission, the National Memorial Commission, and the Rock Creek and Potomac Parkway Commission by Executive Order of June 10, 1933, placed additional important public works agencies in the Department of the Interior.

The combination of a conservation and public works department is a natural union. Without public works we cannot have conservation. Topographic and public land surveys, stream gaging, water resource developments, irrigation dams and ditches, and road building are all in this category and have been performed for many years by the Department of the Interior. The allotments by the Public Works Administration to the Department for these and other projects in the interest of conservation numbered 1,364 and totaled $160,000,000. The sympathetic relationship between conservation and public works could be illustrated by many other examples. Good administration would seem to require that the execution of public works projects eventually should be coordinated in one of the permanent departments of the Government after the present emergency. Here again the extent to which transfers would be made under the authority of the proposed bill is left for later consideration by the President and the Congress.

DEPARTMENT OF THE INTERIOR

Functional and Historical Outline

Exhibit II.

Conservation Functions of the Bureau and Divisions of the Department of the Interior.

General Land Office

The General Land Office is charged with the duty of enforcing all laws relating to the public domain. Its history is that of the development of an empire, marked by the forward march of the homesteader, the linking of East to West by great railroad lines, the reclamation of arid desert lands, the carving out of the great national forests, parks, and other reservations, the endowment of the states with land grants for educational and other public purposes, and the development of mineral resources, together with a part in the changing of existing laws and procurement of new ones to meet the conditions of progress. In the accomplishment of three purposes it has caused the greater portion of the public domain to be surveyed as a means of identification and has made a title record accounting for its trusteeship. Of the original public domain, amounting to approximately 1,500,000,000 acres of land, there remain more than 165,000,000 acres, exclusive of Alaska, to be administered as Congress may determine. In the light of present-day economic and social conditions, the stewardship over these remaining lands becomes a trust comparable in importance to all that has gone before.

Bureau of Indian Affairs

The Bureau of Indian Affairs has management of all Indian matters. including the economic rehabilitation of the Indian and the conservation of Indian properties. The Indian reorganization act, originated in the Interior Department under the present administration, makes mandatory the permanent scientific management of 8,000,000 acres of Indian timber land and 34,000,000 acres of grazing land to conserve these great resources for the upbuilding of Indian welfare, and provides funds for further necessary land acquisition. A great program of conservation affecting the fish and game industry of the 62,000,000 acres of Indian land is in contemplation.

Through public works funds the Department has inaugurated a great soil erosion project for the protection of the 17,000,000-acre Navajo reservation, thereby reducing the deluge of silt being poured into the Boulder Dam reservoir from the overgrazed area. From the same source great impetus has been given to water conservation in many Indian reservations through irrigation and stock water development.

Geological Survey

The Geological Survey is one of the outstanding conservation units of the Government. By its topographic surveys it discloses with engineering accuracy the actual shape and contour of the land surface of the country for a multitude of purposes, including public works. Its geological explorations reveal the character, extent and distribution of our mineral deposits in order that plans may be formulated to promote their rational use to meet present and future demands. Through its stream gauging and determination of our water resources, indispensable information is made available for power, irrigation, drainage and flood-control studies. Through these activities, together with the field operations of the conservation branch in connection with the mineral leasing laws, the Geological Survey furnishes the sound and authentic basic information so vitally necessary before the land, water and mineral resources of the country can be wisely developed.

Bureau of Reclamation

The Bureau of Reclamation is primarily a conservation bureau serving the West's natural resource—water—and by building dams, canals and power plants it puts the conserved water to its greatest beneficial use in the establishment of self-supporting homes. As it stands today, Federal irrigation is largely a rescue agent to provide water sorely needed for farms, orchards and homes that are being built, and for industrial and domestic use in towns. Water thus furnished is the life blood of these communities.

National Park Service

The preservation for posterity and the making available for the enjoyment of the people of today of those areas that embrace natural scenic beauties and unique characteristics are accomplished through the administration by the National Park Service of our national, historic and military parks, national cemeteries, battlefield sites and miscellaneous memorials. The full enjoyment of these areas from a recreational and educational standpoint is made possible through an expert staff composed of geologists, biologists, archaeologists, foresters and historians. This service is responsible for the creation and organization of new national parks and monuments, including careful preliminary studies to determine areas that because of their characteristics are deemed worthy of preservation.

Bureau of Mines

The Bureau of Mines is engaged in the conservation of natural resources such as fuels, ores and petroleum and natural gas, through scientific and technological investigations and dissemination of information concerning their mining, preparation and treatment, with a view to the improvement of health conditions, increase of safety, efficiency, economic development, and the prevention of waste in the mining, quarrying, metallurgical and other mineral industries. It is also engaged in the protection of human life. To this end it conducts investigations pertinent to the mining industry, especially in relation to the safety of miners and the possible improvemnt of conditions under which mining operations are carried on, the causes of mine explosions and other accidents, and the improvement of mine rescue and first-aid methods and appliances.

Division of Investigations

The office of the secretary, in addition to its supervisory control and direction whereby the conservation activities of its several bureaus are coordinated, secure through its Division of Investigations such examinations as are necessary to insure compliance with existing laws governing such activities and the protection of our natural resources.

Division of Grazing

The establishment of the Division of Grazing, under the immediate supervision of the secretary, follows the enactment on June 28, 1934, of the Taylor grazing law. The primary duty of this division is to stop injury to the public grazing lands by preventing overgrazing and soil deterioration and to provide range. The bringing under control of the grazing use of public lands in the interests of national conservation and the livestock industry, with the consequent preventions of erosion, marks the culmination of years of effort to obtain from Congress express authority therefor. The classification of the public lands from the standpoint of grazing and agricultural use is also an important function of this division.

Petroleum Administrative Board

The board is engaged in promoting sound principles of petroleum production whereby the maximum of oil will be produced in each field. Testimony presented at hearings under House Resolution 441 indicates that in some cases twice as much oil may be recovered as under rapid, wasteful methods. Efficiency demands the full utilization of gas energy and water-drive within a pool and this can be accomplished only when gas is saved underground, when wells are properly spaced and properly located in the pool, and when withdrawals are reasonably slow. The engineering staff of the Petroleum Administrative Board is endeavoring under the new pool regulations, to enforce the most efficient spacing and location of wells, to conserve gas energy and to promote equitable slow withdrawals of oil among the operators.

The economics program of conservation is designed to limit the monthly production of crude oil to the current monthly market demands, since overproduction and attendant slumping prices cause two definite forms of waste. Recoverable petroleum underground is wasted when small wells are abandoned, as they must be when oil is selling at distress prices. Oil is wasted above ground when its low price allows it to usurp the place of other fuels which cannot in turn serve the purposes of petroleum, in short, when price

permits inferior uses. Thus conservation of oil is being achieved through economic channels which encourage its most efficient use.

Exhibit 1

Some of the Important Acts of Congress of a Conservation Nature Initiated or Advocated by the Department of the Interior.

Subjects, Date, Purpose

Swamp-land acts. March 2, 1849, Sept. 28, 1850. To reclaim public swamp-lands and promote public health.

Establishment of Geological Survey. March 3, 1879. Classification of public lands.

National forests. March 3, 1891, June 4, 1897. Creation and administration of forest reserves.

Carey Act. Aug. 18, 1894. Reclamation of arid lands by the states.

Preventing forest fires. Feb. 24, 1897. Provides punishment for setting fires in certain cases.

Rights of way. Feb. 15, 1901. Generation and distribution of electrical power, etc.

Reclamation Act. July 11, 1902. Reclamation of arid lands by the Federal Government.

National monuments. June 8, 1906. Preservation of American antiquities.

Agricultural entries on coal lands. March 3, 1909. Reservation of coal deposits to the United States.

Agricultural entries on coal lands. June 22, 1910. Reservation of coal deposits to the United States.

Withdrawal of public lands from entry. June 25, 1910. Reservation of public lands for water-power sites, irrigation, classification and other public purposes.

Agricultural entries on lands containing phosphate, nitrate potash, oil, gas, or asphaltic minerals. July 17, 1914. Reservation of mineral deposits to the United States.

Coal lands—Alaska. Oct. 20, 1914. Leasing of coal lands in Alaska.

Establishment of National Park Service. Aug. 25, 1916. Creation and administration of national parks.

Stock-raising law. Dec. 29, 1916. Stock-raising entries, reserving all mineral deposits to the United States and reservation of driveways and waterholes.

Mineral leasing. Oct. 2, 1917. Leasing of public lands for potash.

Recreation. June 14, 1926. Leasing and disposal of public lands for recreational purposes.

Mineral leasing. Feb. 25, 1920. Leasing of public lands for coal, phosphate, sodium, oil, oil shale or gas.

Alaska. July 3, 1926. Leases of public lands fur farming.

Mineral leasing. Feb. 7, 1927. Leasing public lands for potash.

Alaska. March 4, 1928. Leases of public lands for grazing.

Aviation. March 24, 1928. Leases of public lands for aviation purposes.

Mineral leasing. Dec. 11, 1928. Leasing of public lands for sodium.

Mineral leasing. July 3, 1930, March 4, 1931. Unit operation of oil and gas lands.

Grazing. June 28, 1934. Regulation grazing use, public lands.

A COMMENTARY

(*Continued from page* 9)

certain economy can be achieved. But would it make us happy?

We like distinctiveness, we like to compete, we like danger and uncertainty, we like to feel that there is some elbow room for free action and opportunity to tackle new and exciting things. Fundamentally we do not want difficulty removed from the scene, because only when confronted with problems and difficulties do we think. We feel alive and stirred only when we face the unknown, the complex, the difficult and the dangerous. We invent, dream and work under such conditions, but we go to sleep mentally and become dull under any other.

All this is human psychology. It is ignored by those who childishly believe that they have found a panacea for our ills in the form of a system of regimentation.

Would we trade our birthright of democracy and unlimited economic progress for more elimination of economic fluctuation?

The ideas of "share-the-wealth" and "economic security" are always a glittering promise in time of economic stress. The promise of release from worry seems sweet to the taste, and the price which would be exacted for it is never faced until last.

The solution to our problem may be in regulatory adjustment, but it is not in regimented control.

The engineer is a pioneer, a builder, a leader. He studies the past and projects the future. He gets the facts and applies rigorous analysis before arriving at conclusions. He is intimately connected with the upward swing of economic progress. He distinguishes between the temporary and the enduring, between the apparent and the real. He weighs advantages against disadvantages before making recommendations.

These qualifications impose upon the engineer a social obligation to lead and guide the general public in rejecting unsound panaceas, however attractive, and in holding fast to that which has been proven by experience.

THE ENGINEER AND CALAMITY

(*Continued from page* 11)

markets, rolling up an enormous governmental debt for which, in his method of figuring, posterity has to pay.

A few words must be said about burdening posterity with what we do to-day. We leave to posterity the physical world and a method of bookkeeping. To mention two extremes, we can leave a country with its natural resources well preserved, a veritable Garden of Eden, but with the government burdened with debts, it being understood that since the government is the people, the people will owe those debts to themselves; or, we can do as other empires did and leave a country with its treasury perfectly balanced and a place where shepherds, during certain seasons of the year, may graze their wandering flocks amid the ruins. We engineers should prefer the first; history tells us that "practical" men of affairs have often done the second.

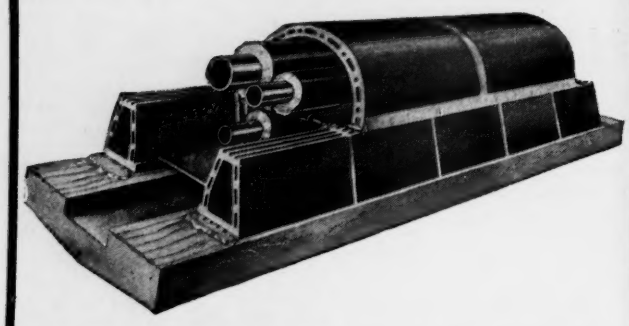
It is, of course, possible that with our present methods of financing it is cheaper to pay home relief than to engage in large-scale public works programs, or, in other words, that it is more economical to stand with our hands in our pockets than to engage in productive work. In that case there is something wrong with our financing methods.

Public works are essentially different from engagements for private profit. Although the value of a large scale work for the prevention of soil erosion should be apparent enough, there is no immediate profit flowing into anybody's pocket. Still the work must be financed through long-term bonds, and heavy interests paid during the life of the bonds. This discourages public works, whereas, for the benefit of the country or community as a whole, just the opposite should be the case. The solution should be apparent enough: *no interest at all should be taken on the capital used for the financing of public works.* Our present banking system does not make this possible, nor does the proposed Banking Bill help in that direction. To this writer it seems that it could be done with a government-owned central bank. Any objection that such financing would be inflationary, since it would involve note issue without "eligible paper" backing, could hardly be valid, as values would be created in proportion to the note issue no less than there is value behind the "eligible paper." Incidentally, the new Banking Bill would permit note issue on the basis of any sound asset of a member bank of the Federal Reserve System. As a matter of fact, the above scheme would prevent paper-wealth from being inflated.

Our scientific expeditions to the seats of ancient civilizations report to us the marvels of ancient engineering undertakings. We hear about the canalizations in Babylon, the water works in the valley of the Nile, the struggle of Egypt against the encroaching sands of the Sahara. We even heard the recent theory advanced that some of the more extravagant structures of the ancients, as the large pyramids of Egypt, were built during periods of depression. It is quite possible that even in those days, due to a lack of variety of occupations, there were periods similar to our depressions. But those absolute rulers surely had more common sense than to place their unemployed on "home relief" as long as something constructive could be done. It would indeed be facetious to try to imagine a pharaoh figuring out in what were his dollars and cents the financial advisability of a project when the dust storms of the Sahara and famine were looming on the horizon. Ancient civilizations would have been impossible with our "conservative" financing.

There is, of course, a difference between the slave-drivers of ancient times and our modern democracy, but the laws of nature and elementary principles of economics are the same. The care of our natural resources and their administration for the welfare of the entire nation must be the object of far-sighted planning, lest a future Volney repeat the words: "Hail, solitary ruins, holy sepulchres, and silent walls! you I invoke! . . . What useful lessons, what affecting and profound reflections you suggest to him who knows how to consult you!"

Members of State Societies are reminded that the functioning of the N. S. P. E. depends upon the prompt payment of dues. Kindly remit to the Secretary or Treasurer of your State Organization.



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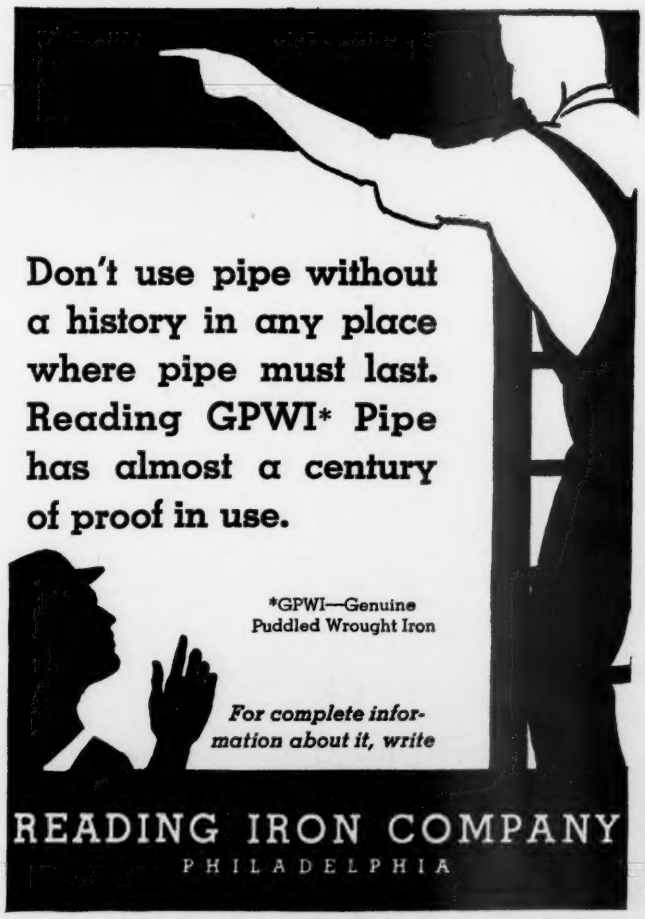
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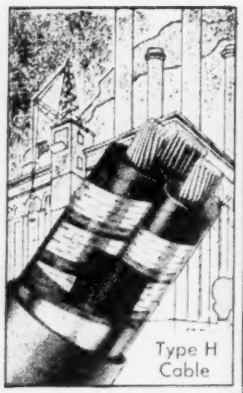
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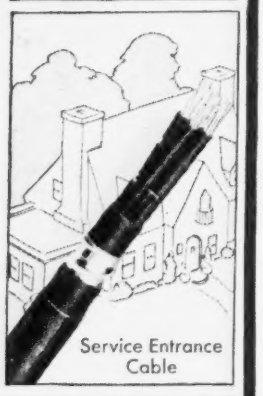
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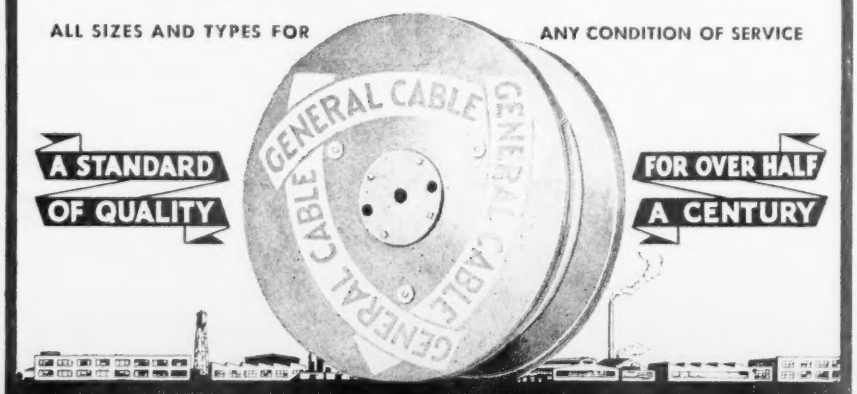

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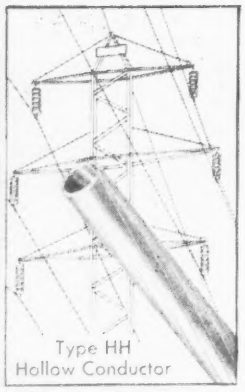
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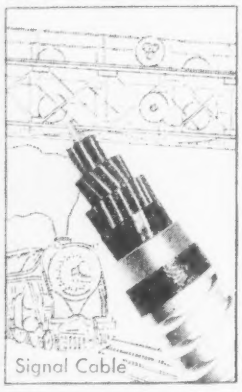
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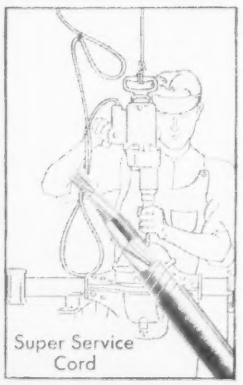
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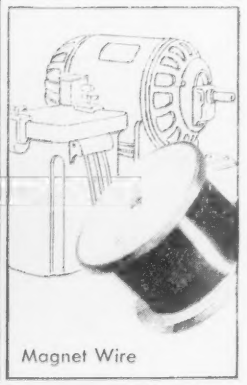
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